



Selected Special Statistics

Stillbirths and Infant Deaths

Kansas, 2015

A graphic consisting of several horizontal blue lines. Overlaid on these lines is the text "Research Summary" in a large, white, outlined, sans-serif font. The text is slanted upwards from left to right.

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Our Vision – Healthy Kansans Living in Safe and Sustainable Environments

Our Mission – To Protect and Improve the Health and Environment of All Kansans

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Executive Summary

Infant mortality is an important indicator of community health. It is associated with a variety of factors such as economic development, general living conditions, social wellbeing where basic needs are met, rates of illness such as diabetes and hypertension, and quality of the environment. This report builds on information in the *Annual Summary of Vital Statistics, 2015* providing a long-term assessment of progress on infant mortality. The report uses five-year rolling average infant mortality to evaluate trends.

In the last century, the Kansas infant mortality rate (IMR) has decreased dramatically, from 73.5 deaths per 1,000 live births in 1912 (2,795 infant deaths) to 5.9 in 2015 (230).

- The Kansas IMR decreased from 2014 (6.3 deaths per 1,000 live births) to 5.9 in 2015. The Kansas rate met the Healthy People 2020 (HP2020) objective of 6.0 deaths per 1,000 live births. The White non-Hispanic population IMR (4.7) met the HP2020 target while the Hispanic (7.6) and Black non-Hispanic (10.4) rates did not.
- The Black non-Hispanic infant mortality rate has remained more than twice that of the White non-Hispanic rate for most of the last 20 years.
- During 2011-2015, most Kansas resident infant deaths occurred soon after birth. Almost two-thirds (67.8% or 831 deaths) happened in the neonatal time period (less than 28 days).
- The leading cause of infant mortality was congenital anomalies (22.8%), followed by prematurity or low birth weight (21.0%), sudden unexplained infant death (SUID) causes (17.1%), and maternal factors and complications (9.3%).
- Perinatal deaths include stillbirths and hebdomadal deaths (less than seven days). Complications of placenta, umbilical cord, and membrane was the leading cause of stillbirths; Prematurity or low birthweight was the leading cause for hebdomadal deaths.
- The 2011-2015 premature infant mortality rate of 43.5 per 1,000 live births was over 21 times higher than the rate for infants born at term (2.0). The IMR for very premature infants was 200.2 deaths per 1,000 live births, 100 times higher than infants born at term.

The *Selected Special Statistics, Stillbirths and Infant Deaths, Kansas, 2015* summarizes vital records data on stillbirths and infant deaths. This report can be found at <http://www.kdheks.gov/phi/index.htm>. Persons inquiring about additional data needs can call (785) 296-8627.

Introduction

One of the basic indicators of the health of a community or state is infant mortality, the death of an infant before one year of age. The calculated infant mortality rate (IMR), serves as one proxy indicator of population health. It reflects the apparent association between the causes of infant mortality and other factors that are likely to influence the health status of the whole population such as economic development, general living conditions, social wellbeing where basic needs are met, rates of illness such as diabetes and hypertension, and quality of the environment [1].

Nationally, for 2014, the most recent year with final death data, statistics showed the infant mortality rate was 5.8 per 1,000 live births. The leading causes of infant death were congenital malformations; prematurity or low birthweight; maternal factors and complications of pregnancy, labor and delivery; and sudden infant death syndrome (SIDS) [2].

The most recent national linked birth/infant death data set (2011-2013 data) included statistics on characteristics collected with the birth certificate in addition to the death certificate. Risk factors for infant death included Black non-Hispanic mothers, prematurity or low birthweight, multiple deliveries, unmarried mothers, mother's age (both younger and older mothers), and no prenatal care [3].

Healthy People 2020 (HP2020), which provides science-based, 10-year national objectives for improving the health of all Americans, includes infant mortality as a leading health indicator. The HP2020 target is 6.0 infant deaths per 1,000 live births [4].

The Kansas Department of Health and Environment's (KDHE) Bureau of Epidemiology and Public Health Informatics (BEPHI) monitors infant mortality and supports programs that promote access to health services for mothers and infants. The Bureau's Division of Public Health Informatics calculates the official state infant mortality rate as part of its ongoing mission to provide data and information to program managers, policy makers, health providers, and the public. This report augments information in the KDHE *Annual Summary of Vital Statistics, 2015* [5] and moves beyond single-year statistics in order to provide more long-term estimates of the true underlying rates.

Methodology

Statistics

Due to small numbers of events, preselected intervals of years are combined to increase data reliability. Five years (2011-2015) are combined for characteristic analysis, and intervals of 20 years and approximately 100 years are used for trend analysis. The long-term (~100 years) infant mortality numbers and rates may be under-reported due to incomplete data collection in the early 1900s.

Additionally, the relative standard error (RSE) is used in this report to evaluate reliability of rates. Values with a relative standard error of 30 percent or less are considered reliable. Values with a relative standard error greater than 30 percent but less than 50 percent are considered unreliable, and rates with RSE greater than 50 percent have been

suppressed in this document. This is consistent with standard National Center for Health Statistics (NCHS) practice [3, 6].

The following statistical tests have been applied where statistically significant differences have been noted in the document. The z-test was used for comparing two infant mortality rates [3]. Poisson Joinpoint regression models were used for trend analysis, and the average annual percent change (APC) was used to characterize the trend over time [7, 8, 9]. Confidence intervals were calculated at the 95% confidence level. If the confidence intervals of two values do not overlap it is considered a conservative estimate of a significant difference [10]. Statistical significance is considered at the 0.05 level.

Five year rolling averages were used to smooth data trends over 20 years since year-to-year variation in infant mortality rates can result in a saw-tooth pattern that obscures underlying trends.

Stillbirths are also included in this report. Stillbirth statistics represent the first full year of events reported under new requirements. In Kansas, a stillbirth is defined as complete expulsion or extraction from its mother of a human child the gestational age of which is not less than 20 completed weeks, resulting in other than a live birth, and which is not an induced termination of pregnancy. [11]. The new definition has resulted in more events being reported. These events may have risk factors similar to those for infant deaths. Rates for 2015 as well as 2014 are not comparable to prior years.

All data reported are based on Kansas residence, unless otherwise noted.

Age Period of Death

The first year of life can be categorized by two major periods, the neonatal period (first 27 days of life) and the post-neonatal period (28 to 364 days of life). The infant deaths occurring in the neonatal period are also further sub-divided into the hebdomadal deaths (0-6 days) and post-hebdomadal deaths (7-27 days). Perinatal period III includes stillbirths and hebdomadal deaths.

Cause of Death Data

The cause of death referred to in this report is the primary or underlying cause of death. It is defined as the disease or injury which initiated the chain of events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury. The underlying causes of death are established through a system known as the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10) [12]. This system promotes uniformity and comparability in the collection and presentation of mortality data.

In this document, Sudden Infant Death Syndrome (SIDS) deaths (ICD-10 code R95) are combined with accidental suffocation and strangulation in bed (ICD-10 code W75) and unknown cause (ICD-10 code R99) in some of the figures/tables. This combination is categorized as Sudden Unexpected Infant Death (SUID).

Analyzing SUID is important since the national campaign to reduce the risk of SIDS has entered a new phase and will now include all sleep-related SUIDs. SIDS, a major component of SUID, decreased by about 50 percent in the 1990s with the greatest decline occurring after the "Safe to Sleep" campaign was initiated in 1994 [13]. Since then, the decline in the SIDS rate has been less dramatic. The decline in SIDS is likely explained

by increasing rates of infant deaths classified as “accidental suffocation and strangulation in bed” and “unknown cause”[3].

Population Group Reporting

This method creates a unique matrix of population groups combining race and Hispanic origin for reporting statistics. In the death certificate statistics (unlinked data) of this document, the population groups are classified using the race/ethnicity of the decedent as reported on the death certificate. The funeral director supplies this information, which is provided by an informant such as a family member.

In the linked birth/infant death statistics, the population groups are classified using the race/ethnicity reported on the birth certificate for the mother. For more information on the population groups, see the Technical Notes in the *Annual Summary of Vital Statistics, 2015* [5].

Data Linkage

This report also provides findings based on the linking of birth certificate and infant death certificate data. Where referenced, the linked birth/infant death statistics are based on a death cohort. The death cohort involves linkage of infant deaths with the corresponding live births. These births may have occurred in the same calendar year as the death or in the year prior.

The birth/infant death data analyzed are based on a union of single year linked birth/infant death files created six months after a given event year ended. Linkage of the respective records is performed by the BEPHI Public Health Informatics group using deterministic methodology based on the presence of a birth certificate identification number in the death history file. A manual matching process is used for infant deaths that do not match automatically. Because of the timeframe for creating the annual linked birth/infant death statistical files, infant death reports received later than six months after the end of a given event year are not included in the given event year.

Linked data are an important tool to examine infant mortality comparisons between Kansas and other states including the District of Columbia, or the United States. To obtain statistically reliable state-specific data stratified by race and ethnicity, it is necessary to combine years. The National Center for Health Statistics combines three years; the most recent report includes data from 2011-2013. Infant mortality rates were not calculated for states/District of Columbia when the number of events was less than 20 [3]. For this report, five years (2011-2015) of linked birth/infant deaths were combined to obtain statistically reliable data for stratification on characteristic variables.

For Kansas, between 2011 and 2015, there were 1,225 resident infant deaths reported to KDHE (Table A). Of those, 1,218 (99.4%) were linked to a birth certificate. Thirty-one of the birth records that were linked occurred in 2010. Unlinked records were due to a number of factors beyond the scope of this summary.

Table A. Linked Birth/Infant Deaths, Percent Linked, Kansas, 2011 - 2015

Year	Infant Deaths, Total	Infant Deaths, Linked File	
	Number	Number	%
2011	247	244	98.8
2012	254	254	100.0
2013	248	244	98.4
2014	246	246	100.0
2015	230	230	100.0
Totals	1225	1218	99.4

This method of linking the infant death and their birth records is valuable for exploring the various relationships of the infant deaths with factors surrounding birth and with mother's risk factors

- The death file contains age at death and underlying cause.
- The birth file contains birthweight, gestational age, and information on the mother such as age, marital status, educational level, and maternal risk factors such as tobacco use.

Results

Trend Analyses

In 2015, the Kansas infant mortality rate was 5.9 per 1,000 live births (230 infant deaths). This rate is down slightly from 6.3 per 1,000 live births (246 infant deaths) in 2014 (Tables 1, 2). The change was not statistically significant.

In the last century, the IMR has decreased dramatically (92.0%) from 73.5 deaths per 1,000 live births in 1912 (2,795 infant deaths) (Figure 1). Stillbirths decreased 77.6 percent from 26.8 stillbirths per 1,000 (live births + stillbirths) in 1912 (1,047 stillbirths) to 6.0 (237 stillbirths) in 2015 (Figure 2). Incomplete reporting of live births, infant deaths, and stillbirths in the early 1900s may have resulted in slightly higher or lower estimated mortality rates for those years.

In the last twenty years, there has been some fluctuation in the IMR from a first high of 8.2 in 1996, to a first low of 6.7 in 2003, then reaching a high of 7.9 in 2007, and an overall low of 5.9 in 2015. According to the results of a Joinpoint Poisson regression model, the IMR decreased by 8.0% per year [95% CI: -18.8, 4.3] during the period 1996-1998 and increased by 0.8% per year [95% CI: -0.62, 2.2] during the period of 1998-2007. The IMR has been significantly decreasing by 2.9% per year [95% CI: -4.3, -1.5%] during the period of 2007-2015 (Figure 3).

Neonatal/Post-Neonatal Period Deaths

Neonatal death rates showed a decreasing trend during the period from 1996 to 2015 with some fluctuation, although not statistically significant; post-neonatal death rates from 1995 to 2007 fluctuated greatly, resulting in no significant trend, however, from 2008 to 2015 a significant decreasing trend was present (Table 2). For neonatal death rates, rolling five year averages showed a slight decrease in most years from 4.8 in 1996-1999 to 4.2 in 2010-2015 (Figure 6). The post-neonatal death rates rolling five year averages showed an overall decrease from 2.5 in 1996-1999 to a low of 2.0 in 2011-2015, with some fluctuation in the years between (Figure 6).

Perinatal Period III Deaths

In Kansas from 1996-2015, rolling five year averages showed a gradual decline in perinatal death rates, with some fluctuation, decreasing from 8.7 deaths per 1,000 live births in 1996-2000 to 8.4 in 2011-2015 (Figure 7).

Population Groups

For Kansas in 2015, the White non-Hispanic population group had the highest number of infant deaths (130 infant deaths), while the Black non-Hispanic group had the highest rate (10.4 per 1,000 live births) (Table B). The disparity in rates between White and Black non-Hispanic infant deaths was evident in all periods of death (Table 3).

Table B. Stillbirth, Perinatal Period III* and Infant Mortality Rates by Selected Population Groups, Kansas, 2015

	Total	White non-Hispanic	Black non-Hispanic	Hispanic any race
Infant deaths †	5.9	4.7	10.4	7.6
Neonatal deaths †	4.1	3.3	7.7	5.2
Post neonatal deaths †	1.8	1.4	2.7	2.4
Stillbirths ‡	6.0	4.8	16.7	6.0
Perinatal period III ‡	9.4	7.5	24.0	10.4

* Perinatal period III includes stillbirths and hebdomadal deaths (deaths that occur prior to the 7th day of life)

†Rate per 1,000 live births

‡Rate per 1,000 (live births + stillbirths)

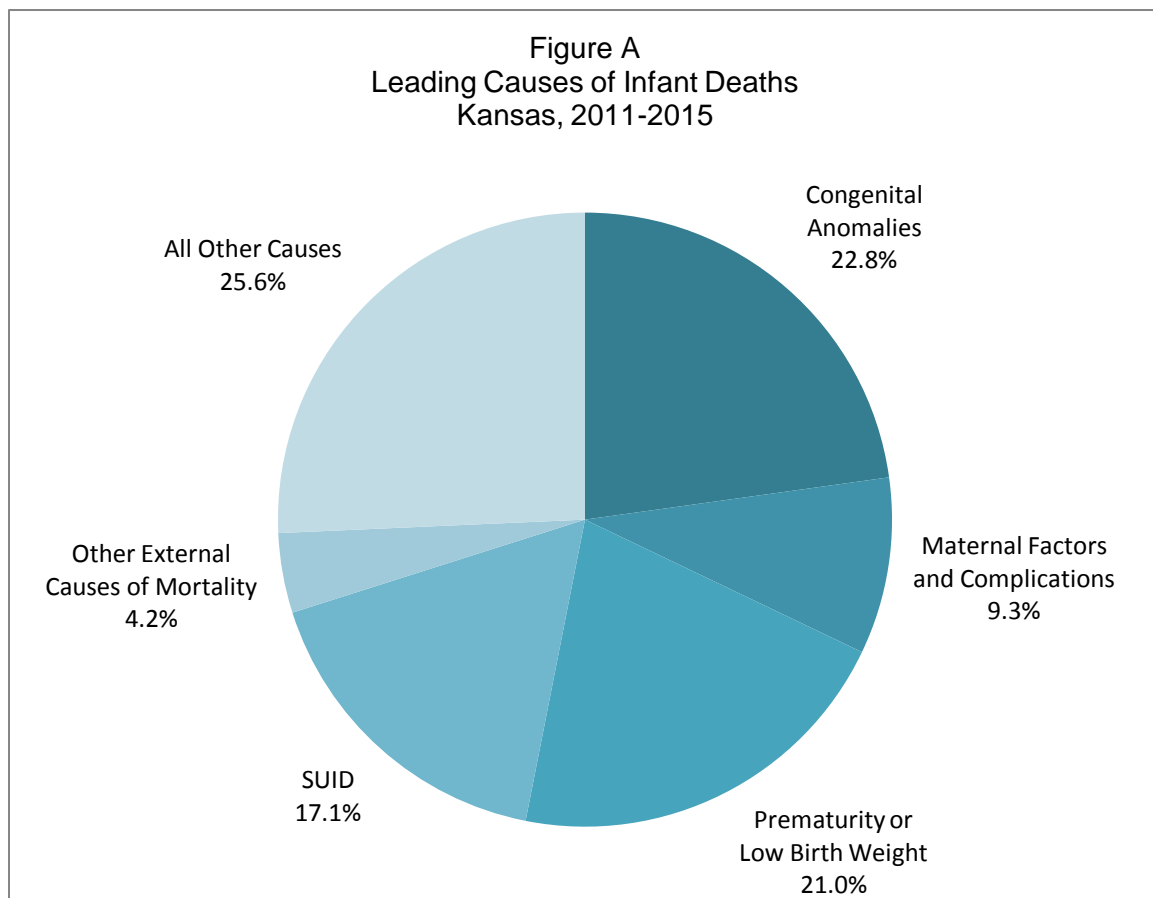
A population group comparison over 20 years based on five year moving averages (Figure 4) revealed that the Black non-Hispanic population has consistently had the highest infant mortality rates. The rate has fluctuated, reaching a high of 17.1 in 2003-2007 and a low of 12.8 in 2011-2015. In the same 20 years, the White non-Hispanic population showed a slight decreasing trend from 6.8 in 1996-2000 to 5.0 in 2011-2015. The IMR in the Hispanic population fluctuated, with a low of 6.1 in 1996-2000; since then, the rate in the Hispanic population has increased in most years to 7.3 in 2011-2015. The Black non-Hispanic IMR has remained over twice that of the White non-Hispanic population, with an average ratio of 2.5.

Five Year Characteristic Analysis (2011-2015)

Death Certificate Statistics

Causes of Infant Death

The Kansas infant mortality rate for the period 2011-2015 was 6.2 infant deaths per 1,000 live births. The leading cause of infant mortality was congenital anomalies (Figure A, Table 5). The most frequent congenital anomaly was congenital malformations of the circulatory system (24.7%, ICD-10 codes Q20-Q28), followed by congenital malformations of the nervous system (19.7%, ICD-10 codes Q00-Q07) and chromosomal abnormalities (19.7%, ICD-10 codes Q90-Q99). Almost seventy-five percent (74.9%, 215 deaths) of congenital anomaly deaths occurred in the neonatal period (under 28 days). The category “other causes” includes conditions such as spinal muscular atrophy, secondary pulmonary hypertension, hypertrophic cardiomyopathy, myocarditis, and disorders of the lungs.



Analysis of select population groups for the 2011-2015 cohort revealed the leading cause of infant death for Black non-Hispanic infants was prematurity or low birthweight. The leading cause of death among White non-Hispanic and Hispanic infants was congenital anomalies (Table C).

Analysis of rates by population group showed that Black non-Hispanic and Hispanic infants died at a significantly greater rate than White non-Hispanic infants where the cause of death was prematurity or low birthweight. Black non-Hispanic infants died at a significantly greater rate than White non-Hispanic, but not compared to the Hispanic population group, where the cause of death was SUID. Black non-Hispanic infants died at a significantly greater rate than White non-Hispanic and Hispanic infants where the cause of death was maternal factors and complications. Among infants that died of congenital anomalies, the infant death rates were not significantly different among these three population groups (Table C).

Table C. Infant Deaths by Selected Population Groups and Leading Causes of Death, Kansas, 2011-2015

Population Group*	Number of Deaths	Percent	Rate†
Black non-Hispanic (n=168)			
1. Prematurity or Low Birthweight	57	33.9	4.3
2. SUID	27	16.1	2.1
3. Maternal Factors	19	11.3	1.4
4. Congenital Anomalies	15	8.9	1.1
White non-Hispanic (n=709)			
1. Congenital Anomalies	184	26.0	1.3
2. SUID	131	18.3	0.9
3. Prematurity or Low Birthweight	118	16.6	0.8
4. Maternal Factors	71	10.0	0.5
Hispanic any-race (n=228)			
1. Prematurity or Low Birthweight	57	25.0	1.8
2. Congenital Anomalies	55	24.1	1.8
3. SUID	30	13.2	1.0
4. Maternal Factors	15	6.6	0.5

*Non-Hispanic population group includes unknown Hispanic origin

†Rate per 1,000 live births

Neonatal/Post-Neonatal Period Deaths

There were 831 neonatal deaths (4.2 per 1,000 live births, 67.8%) and 394 post-neonatal deaths (2.0 per 1,000 live births) in the 2011-2015 Kansas infant death cohort (Tables 1, 2). Prematurity or low birth weight was the leading cause of neonatal deaths (30.8%), while SUID was the leading cause of post-neonatal deaths (46.2%) (Table 5).

Perinatal Period III Deaths

For the Kansas 2011-2015 cohort, 1,667 infants died in the perinatal period (8.4 per 1,000 live births and stillbirths) comprising 994 stillbirths and 673 hebdomadal deaths (Table 1). The leading cause of stillbirths was complications of placenta, umbilical cord and membrane (30.2%, ICD-10 code P02) (Table 7) while prematurity or low birthweight was the leading cause of death for hebdomadal period deaths (37.6%) (Table 5).

County Rates

The counties with the highest number of infant deaths in the 2011-2015 cohort included Sedgwick (259 or 21.1%), Johnson (170 or 13.9%), Wyandotte (108 or 8.8%), and Shawnee (72 or 5.9%). These four counties accounted for 49.7 percent of all infant deaths (Table 4).

The counties with the highest reliable ($RSE \leq 30\%$) infant mortality rates, included Reno (9.3 infant deaths per 1,000 live births), Ford (8.9), Barton (8.2), Franklin (8.2), and Lyon (8.2); while the counties with the lowest (reliable) non-zero rates were Douglas (4.0), Leavenworth (4.1), Saline (4.2), Johnson (4.6), and Riley (5.2) (Table 4).

Since the number of deaths was too small for analysis in many counties, counties were combined into Public Health Regions (Figure 5). The region with the highest reliable ($RSE \leq 30\%$) infant mortality rate was the Southwest Surveillance Region at 8.7 per 1,000 live births. The region with the lowest infant mortality rate was the Kansas City Metro Region at 5.2 per 1,000 live births, statistically significantly lower than the state rate (Figure 5).

Zip Code Rates

Several zip codes had enough deaths to allow analysis on the 2011-2015 cohort. The zip codes with the highest reliable ($RSE \leq 30\%$) mortality rates included four zip codes located in Sedgwick County: 67214 (13.3 deaths per 1,000 live births), 67211 (11.8), 67218 (11.5), 67210 (11.5), and zip code 66112 (Wyandotte County, 12.1). The zip-codes with the lowest reliable ($RSE \leq 30\%$) rates were 66062 (Johnson County, 3.3), 67401 (Saline County, 4.5), 66441 (Geary County, 4.5), 67203 (Sedgwick, 5.4), 66502 (Riley County, 5.8).

Linked Birth/Infant Death Statistics

Kansas Statistics

In this section, a variety of maternal and infant characteristics are presented on the linked birth and infant death data file (linked file) from 2011 to 2015. The linked file differs slightly from the mortality file (infant deaths from death certificates in 2011 to 2015), with 3 infant deaths not linked to a birth record. The Kansas linked file for 2011-2015 contains 1,218 (99.4%) of the 1,225 infant deaths contained in the mortality file.

Population group of the infant was known for 1,208 (99.2%) of the 1,218 linked records. The mother's race was reported as White non-Hispanic in 704 live births (58.3%), Black non-Hispanic in 168 live births (13.9%), Native American non-Hispanic in 11 live births (0.9%), Asian or Pacific Islander non-Hispanic in 25 live births (2.1%), Multi-racial non-Hispanic in 61 live births (5.0%), other race non-Hispanic in 11 live births (0.9%), and Hispanic (all races) in 226 live births (18.7%).

Cause of Death

The leading cause of death among the 1,218 infants in the 2011-2015 linked file was congenital anomalies (278 deaths, 22.8%). This was followed by prematurity or low birth-weight (258 deaths, 21.2%), SUID (ICD-10 codes R95, R99, and W75, with combined 206 deaths, 16.9%), and maternal factors (114 deaths, 9.4%) (Table 8).

Prematurity is an important factor in infant death, even though short gestation and low birthweight may not be the primary cause. Among the infant deaths with primary cause of death as congenital anomalies, slightly over half (51.6%) were born preterm – primarily late preterm (22.5%). Ninety-one percent of the infant deaths due to maternal factors were born prematurely, with 86.7 percent born very premature (Table 8). The cause of death categorized as maternal factors and complications of pregnancy, labor and delivery include complications such as premature rupture of the membrane, placental separation, chorioamnionitis, and incompetent cervix.

Among infants where the cause of death was classified as SUID, 73.8 percent were born early term or later (Table 8).

Birthweight

Of the 1,218 linked records, birthweight of the infant was known for 1,210 (99.3%). Three hundred one (24.9%) of the deaths occurred to infants with birthweights of less than 500 grams; 295 (24.4%) of the deaths occurred to infants with birthweights of 500 to 1,499 grams; 187 (15.5%) of deaths occurred to infants with birthweights of 1,500 to 2,499 grams; and 427 (35.2%) of deaths occurred to infants with birthweights of 2,500 grams or more (Table 9).

Among the infant deaths where birthweight was known, 783 infants (64.7%) were low birthweight (less than 2500 grams). In the same time period (2011-2015), only 7.3 percent of all live births had low birthweight (Table 9,10).

Among normal birthweight babies, Black Non-Hispanic infant mortality is low (4.0), but remains double the White Non-Hispanic infant mortality (2.0) and 1.5 times higher than the Hispanic infant mortality (2.7) (Table 9, 10).

Gestational Age

Gestational age was known for 1,210 (99.3%) of the 1,218 linked records. Five hundred eighty-seven of the infants (48.5%) were very premature (less than 32 weeks), 62 (5.1%) were moderately premature (32 to 33 weeks), 113 (9.3%) were late premature (34 to 36 weeks), 188 (15.5%) were early term (37 and 38 weeks), and 258 (21.3%) were born at term (Table 9).

Given that gestational age was known, 762 (63.0%) of the infant deaths were premature (less than 37 weeks gestation) (Table 9). In the same time period (2011-2015), nine percent (8.9%) of all live births were premature (Table 10).

A study of gestational age by mother's population group reveals that among the Black non-Hispanic population in 2011 through 2015, 72.6 percent of the infant deaths were premature; 61.1 percent of the infant deaths to White non-Hispanic mothers were premature, and among the Hispanic population, 65.3 percent were premature (Table 9). In the same period (2011-2015), 12.9 percent of all live births among Black Non-Hispanic mothers were premature, 6.6 percent of all live births among White Non-Hispanic mothers were premature, and among the Hispanic population, 8.3 percent of all live births were premature (Table 10).

Plurality

Birth plurality (the total number of births resulting from a single pregnancy) was known for 1,216 of the linked deaths. Eighty-five percent (85.5%) of the infants were singletons at birth (1,040), 13.5 percent (164) were part of twin deliveries, and 1.0 percent (12) were triplet or above deliveries. Fourteen percent (14.5%, 176 deaths) of infant deaths in the linked file occurred among multiple births, whereas for all live births in the same time period (2011-2015) only 3.3 percent were part of a multiple birth delivery (Table 9, 10).

Mother's Age Group

Age-group of the mother was known for 1,214 (99.7%) of the infant deaths. The highest percentage of deaths occurred to infants born to women aged 20-24 (30.4%), followed by women aged 25-29 (28.5%), women aged 30-34 (19.7%), and women aged 10-19 (10.5%). The highest percent of all live births in the same time period was to mothers 25-29 years of age (32.9%), followed by 20-24 years of age (24.7%) and 30-34 years of age (24.7%) (Table 9). A lower percentage of infant deaths occurred among mothers aged 25-34 than births for the same age group, and a higher percentage among mothers aged 10-24. However, among Black Non-Hispanic mothers, a lower percentage of infant deaths occurred among mothers 10-19 years of age. Among Hispanic mothers, a lower percentage of infant deaths occurred among mothers 30-34 years of age (Table 9).

Mother's Education

For mothers 25 years of age and older, the education level was known for 721 (59.2%) of the linked deaths. Mothers whose education level was high school or GED had the highest percentage of infant deaths (24.4%), followed by those with some college but no degree (21.2%), and those with a Bachelor's Degree (19.7%). Mothers who have a doctorate degree had the lowest percent (1.9%) of infant deaths. When comparing to the distribution of deaths by mothers' education level for the live births in the same time period (2011-2015), there was a higher percentage of mothers with a Bachelor's Degree (30.0%) and a lower percentage of mothers with a high school degree or GED (16.1%) (Tables 9).

Marital Status

Marital status at the time of pregnancy was known for 1,207 (99.1%) of the linked deaths (2011-2015). In forty-nine percent (49.5%) of the infant deaths, the mother was not married at the time of her pregnancy or delivery (Table 9). This compared with 36.6 percent of live births (2011-2015) where the mother reported she was not married (Table 10).

Prenatal Care

The month prenatal care began was known for 1,125 (92.4%) of the linked infant deaths. Seventy percent (70.8%) of these linked infant deaths started prenatal care in the first trimester. Seventy-nine percent (79.5%) of all live births in the same time period (2011-2015) started prenatal care in the first trimester. Six percent (6.1%) of linked infant deaths had no prenatal care (69 infant deaths); however, only 0.9 percent of births had no prenatal care, resulting in a mortality rate among infants with no prenatal care at 40.9 deaths per 1,000 live births. Infants starting prenatal care in the second trimester also had a statistically significantly higher IMR (7.0) than infants starting prenatal care in the first trimester (5.2) (Tables 9, 10).

Adequacy of Prenatal Care Utilization (APNCU) Index

The APNCU index was known for 1,096 (90.0%) linked records. Of these where APNCU index was known, half (50.2%) had Adequate Plus prenatal care, 25.6% had Adequate, 5.1% had Intermediate and 19.0% had Inadequate prenatal care. Inadequate prenatal care was more common for infants in the linked birth/infant death dataset (19.0%) than for live births generally (11.5%). Adequate or better prenatal care was less common for infants in the linked birth/infant death dataset (75.8%) than for live births generally (82.5%), but Adequate Plus prenatal care was much more common for infants in the linked birth/infant death dataset (50.2%) than for live births generally (30.9%) (Tables 9, 10).

Smoking

Smoking status was reported in all 1,218 of the linked infant deaths. Mothers reported smoking at some time during pregnancy in 20.6 percent of the infant deaths compared with 12.7 percent of all live births from 2011 to 2015 (Tables 9, 10).

Pay Source

Delivery payer was known for 1,212 of linked infant deaths. The highest percent of these births were paid for by Medicaid (42.9%), followed by private insurance (41.0%), and self-pay (8.8%). For all live births in the 2011-2015 cohort with payer indicated, only 33.0 percent were paid for by Medicaid, and 52.2 percent were paid for by private insurance. The mortality rate was 8.0 per 1,000 live births paid by Medicaid and 7.2 per 1,000 live births self paid compared to 4.8 per 1,000 live births paid by private insurance (Tables 9, 10).

National Statistics

Nationally, final birth and death data allows for the creation of the linked birth/infant death data set for the United States. From the most recently published report on linked infant death/birth statistics (2013 period), the infant mortality rate for the United States was 6.0 per 1,000 live births, which compares to 6.3 for Kansas residents for the same year [3]. This report combines the years 2011-2013 for analysis of birth characteristics such as race and ethnicity. The national infant mortality rate was 6.0 per 1,000 live births for this three year period; White non-Hispanic infant mortality was 5.1, Black non-Hispanic infant mortality was 11.3, and Hispanic infant mortality was 5.1 [3]. The same methodology used for these national statistics was used for Kansas 2011-2013 and the results can be found in *Selected Special Statistics, Stillbirths and Infant Deaths, Kansas, 2013* [14].

Discussion

Kansas Statistics

In a little over a century, the Kansas IMR has decreased dramatically, from 73.5 deaths per 1,000 live births in 1912 to 5.9 in 2015. In the last twenty years, the overall decreasing trend of the IMR was statistically significant even with the fluctuations in this time period.

The IMR in Kansas in 2015 is at a historic low of 5.9, and meets the Healthy People 2020 objective of 6.0 deaths per 1,000 live births. Data analysis by population groups showed the White non-Hispanic population (4.7 per 1,000 live births) met the HP2020 target, but the Hispanic (7.6) and Black non-Hispanic (10.4) population groups did not [4].

Overall, in Kansas 2011-2015, 22.8 percent of infant deaths were attributed to congenital anomalies, 21.0 percent were attributed to prematurity or low birthweight, and 17.0 percent were attributed to SUID. Black non-Hispanics were at an increased risk of infant deaths from prematurity and SUID, and Hispanic infants were at an increased risk of death from prematurity compared to White non-Hispanics.

Most infant deaths in Kansas in 2011 to 2015 occurred soon after birth. Two-thirds happened in the neonatal time period (less than 28 days of age), and over half occurred in the first week (Table 5).

Risk Factors

Analysis of the linked file revealed that low birthweight or prematurity were primary risk factors for infant death even when the underlying or primary cause of death was not prematurity or low birthweight.

Gestational age-specific analysis (linked file) showed an infant mortality rate of 43.5 per 1,000 live births for infants born prematurely, over 17 times that for infants born at term (2.0 deaths per 1,000 live births). Similarly, the infant mortality rate for very premature infants (less than 32 weeks, 200.2 per 1,000 live births) was 100 times higher than the rate for infants born at term.

Additional notable risk factors for infant deaths (linked file) included no prenatal care (6.1% of linked deaths), multiple births (14.5%), mothers who smoked during pregnancy (20.6% of infant deaths), and out-of-wedlock births (49.5%). Analysis of mother's age showed the highest percent of infant deaths among mothers aged 25-29 (29.8%), but the highest rate was among 10-19 year old adolescents (8.2 infant deaths per 1,000 live births).

National Statistics

Comparing Kansas, other states, and national statistics on infant mortality is complicated by the fact that national statistics are published much later than state statistics. The most recent available final national birth data is for 2015, and the most recent available final national death data is for 2014 [2, 15]. Final results indicate a national infant mortality rate of 5.8 per 1,000 live births, compared to 6.3 for Kansas residents in 2014. The difference between these two rates is not statistically significant.

The most recently published national report that analyzed linked infant mortality used 2011-2013 data. Nationally, the infant mortality rate was 6.0 per 1,000 live births for this period [3]. This report also presents the national and state infant mortality rates by race and Hispanic origin. The Kansas rates remain higher than the national rates for all population subgroups [3].

Limitations

This report's findings are subject to several limitations. An important concern is the issue of receiving vital events from other states within the KDHE reporting deadline. Vital statistics are gathered on an occurrence basis but are traditionally reported on a residence basis. For complete residence statistics, reports must be received from other states for events occurring to Kansas residents. Because of delays or other late reporting, some out-of-state vital event reports have not been received by KDHE by the cutoff date of June 30 of the year following the event year. Past evaluations indicate that over 99 percent of all vital events to Kansas residents are received before the cutoff date.

Evaluation of the linked birth/infant death cohort is subject to limitations due to the inability to link all deaths to a corresponding birth report. This inability may be due to a number of reasons related to receipt of the corresponding record from another state, name differences between the two reports, both events not occurring in Kansas, or residency changes.

Additionally, comparison of Kansas linked data to other state or national data has limitations due to the timeliness of the national reports as well as differences in methodology. As mentioned earlier, out-of-state births may not be available to match infant deaths at the state level, but are available for matching at the national level.

The ICD-10 death classification system limits the bias of human coding of mortality information. The system also attempts to reduce the effect of spelling errors or placement of literal information in the cause of death fields. One limitation is the system's inability to take into account differences in knowledge and attitudes among physicians who complete the cause of death information. Individual biases, unfamiliarity with the patient, or inability to perform an autopsy may affect the information available to the physician when certifying the cause of death. While many death certificates contain four full lines of detailed information on the events or illnesses leading up to the death, some death certificates contain only limited information.

The causes of stillbirths are not as well documented as those of infant deaths. The American Congress of Obstetricians and Gynecologists recommends an increase in the percentage of stillbirths for which placental evaluation is performed and autopsy is offered [16]. Additionally, since KSA 65-2401 [11] was revised in mid-2014 to change the stillbirth reporting requirements from weight of the fetus (>350 grams) to length of gestation (≥ 20 weeks), vital records data for this year may not represent a consistent picture of all fetal deaths.

Smoking status and other potential risk factors may be under-reported on birth certificates.

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Table 1
Births, Stillbirths, and Infant Deaths by Year by Period of Death
Kansas, 1996-2015

Year	Total * Deliveries	Live Births	Stillbirth	Hebdomadal † Deaths	Perinatal ‡ Deaths	Neonatal § Deaths	Postneonatal ¶ Deaths	Infant # Deaths
1996	36,703	36,524	179	157	336	199	100	299
1997	37,393	37,191	202	147	349	173	101	274
1998	38,571	38,372	199	132	331	172	91	263
1999	38,923	38,748	175	159	334	189	92	281
2000	39,831	39,654	177	146	323	174	92	266
2001	39,041	38,832	209	148	357	178	107	285
2002	39,484	39,338	146	155	301	192	90	282
2003	39,559	39,353	206	138	344	177	85	262
2004	39,739	39,553	186	144	330	176	108	284
2005	39,895	39,701	194	153	347	196	101	297
2006	41,088	40,896	192	137	329	176	117	293
2007	42,137	41,951	186	163	349	211	122	333
2008	41,997	41,815	182	160	342	193	110	303
2009	41,601	41,388	213	144	357	176	114	290
2010	40,607	40,439	168	143	311	170	83	253
2011	39,816	39,628	188	121	309	157	90	247
2012	40,499	40,304	195	142	337	173	81	254
2013	38,978	38,805	173	140	313	166	82	248
2014	39,394	39,193	201	138	339	175	71	246
2015	39,363	39,126	237	132	369	160	70	230

*Total Deliveries = Live Births + Stillbirths.

†Hebdomadal Deaths = Deaths at less than 7 days of age.

‡Perinatal Deaths = Stillbirths + Hebdomadal Deaths.

§Neonatal Deaths = Deaths at less than 28 days of age.

¶Postneonatal Deaths = Deaths between 28 days and 1 year of age.

#Infant Deaths = Deaths under 1 year of age.

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 2
Perinatal/Infant Mortality Rates by Period of Death
Kansas, 1996-2015

Year	Stillbirth*	Hebdomadal Deaths†	Perinatal Deaths*	Neonatal Deaths †		Postneonatal Deaths†	Infant Deaths†	
				KS	US		KS	US
1996	4.9	4.3	9.2	5.4	4.8	2.7	8.2	7.3
1997	5.4	4.0	9.3	4.7	4.8	2.7	7.4	7.2
1998	5.2	3.4	8.6	4.5	4.8	2.4	6.9	7.2
1999	4.5	4.1	8.6	4.9	4.7	2.4	7.3	7.1
2000	4.4	3.7	8.1	4.4	4.6	2.3	6.7	6.9
2001	5.4	3.8	9.1	4.6	4.5	2.8	7.3	6.9
2002	3.7	3.9	7.6	4.9	4.7	2.3	7.2	7.0
2003	5.2	3.5	8.7	4.5	4.6	2.2	6.7	6.9
2004	4.7	0.1	8.3	4.4	4.5	2.7	7.2	6.8
2005	4.9	3.9	8.7	4.9	4.5	2.5	7.5	6.9
2006	4.7	3.3	8.0	4.3	4.5	2.9	7.2	6.7
2007	4.4	3.9	8.3	5.0	4.4	2.9	7.9	6.8
2008	4.3	3.8	8.1	4.6	4.3	2.6	7.2	6.6
2009	5.1	3.5	8.6	4.3	4.2	2.8	7.0	6.4
2010	4.1	3.5	7.7	4.2	4.1	2.1	6.3	6.2
2011	4.7	3.1	7.8	4.0	4.1	2.3	6.2	6.1
2012	4.8	3.5	8.3	4.3	4.0	2.0	6.3	6.0
2013	4.4	3.6	8.0	4.3	4.0	2.1	6.4	6.0
2014	5.1	3.5	8.6	4.5	3.9	1.8	6.3	5.8
2015	6.0	3.4	9.4	4.1	n.a.	1.8	5.9	n.a.

*Per 1,000 (live births + stillbirths).

†Per 1,000 live births.

n.a. = US final death data for 2015 are not yet available

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Figure 1
Infant Mortality Rates
Kansas, 1912-2015

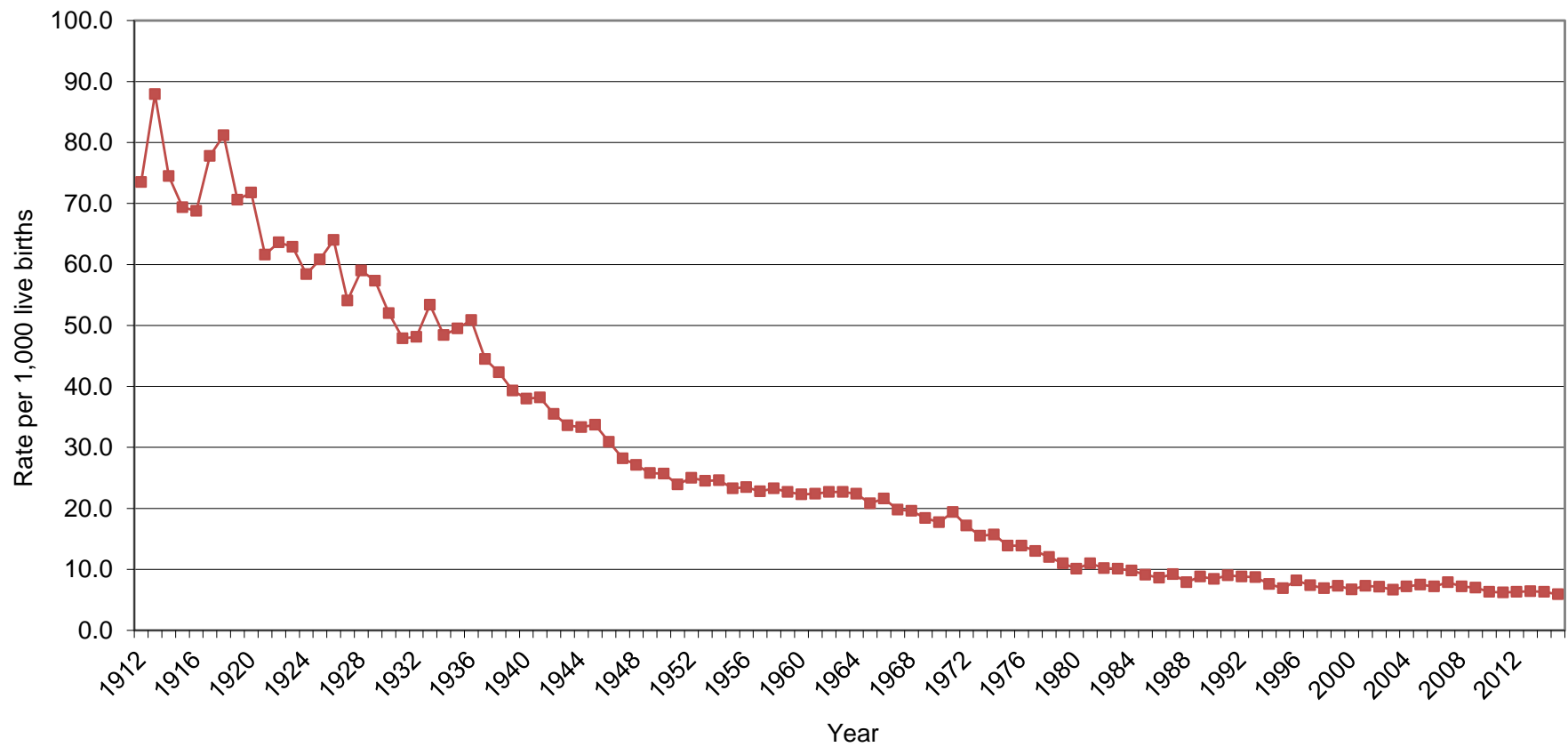


Figure 2
Stillbirth Mortality Rates
Kansas, 1912-2015

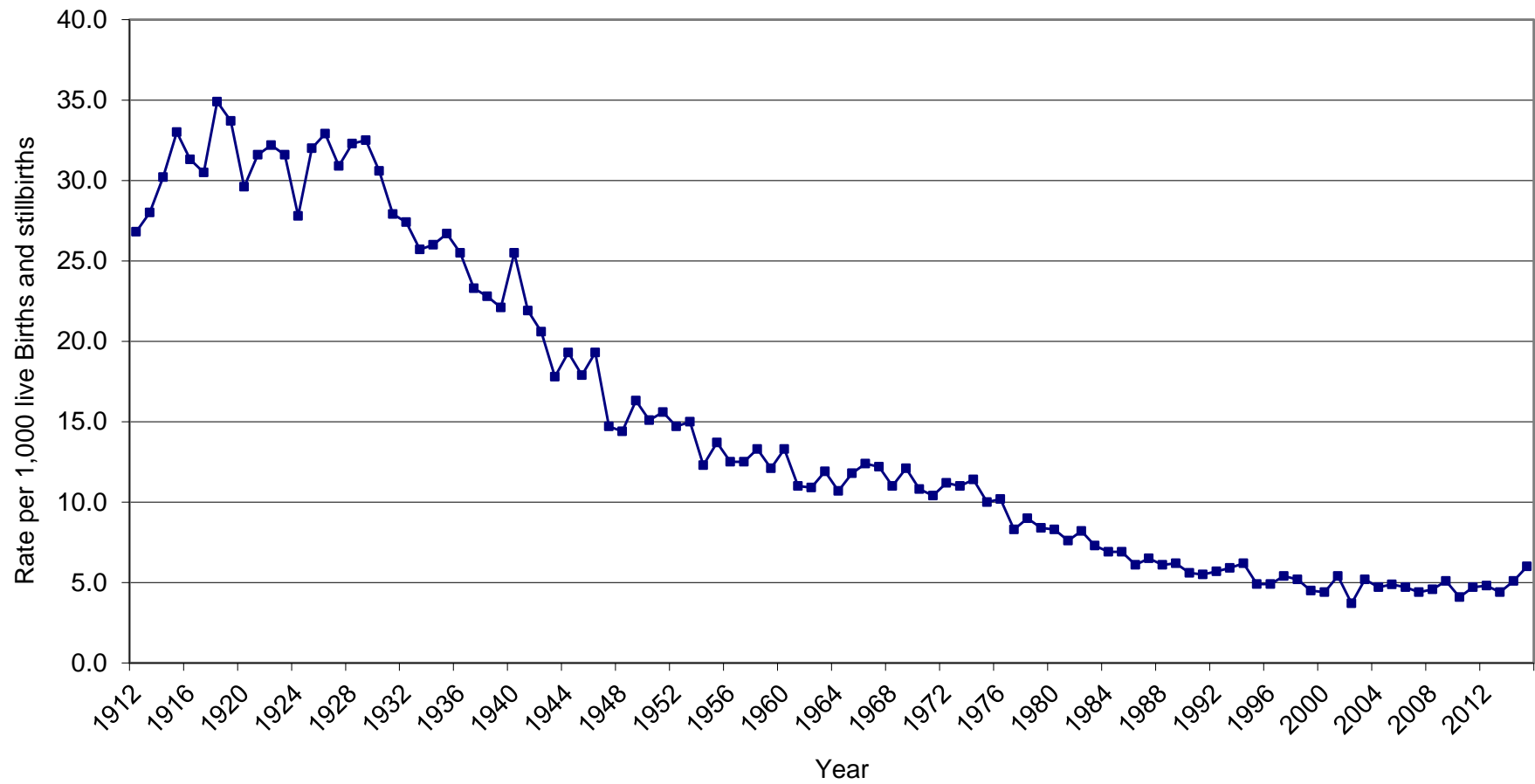
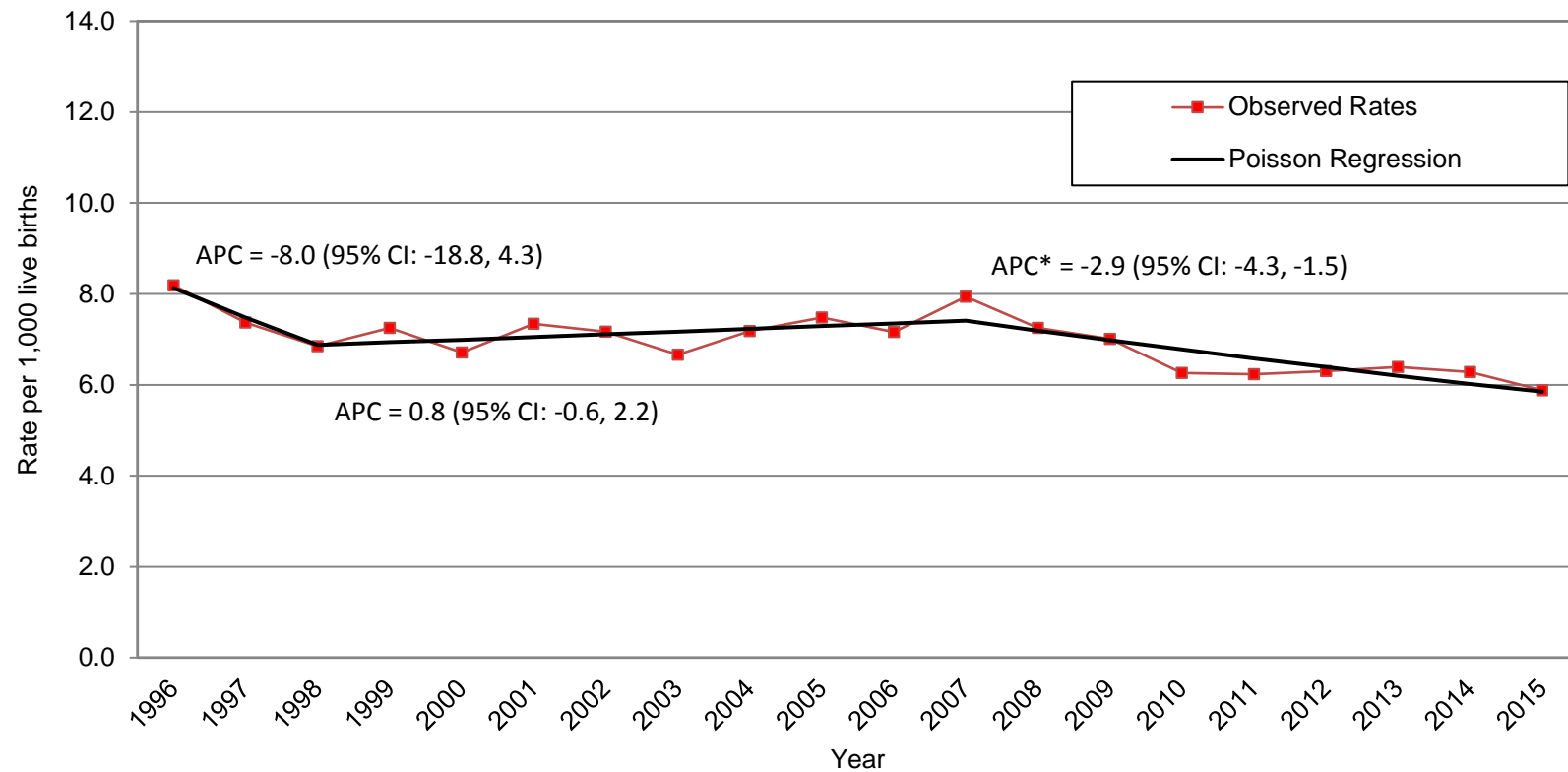


Figure 3
Trend in Infant Mortality Rates
Kansas, 1996-2015



*The Annual Percent Change (APC) shows a statistically significant trend, $\alpha < 0.05$.

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Figure 4
Five Year Average Infant Mortality Rates
by Population Group of Mother
Kansas, 1996-2015

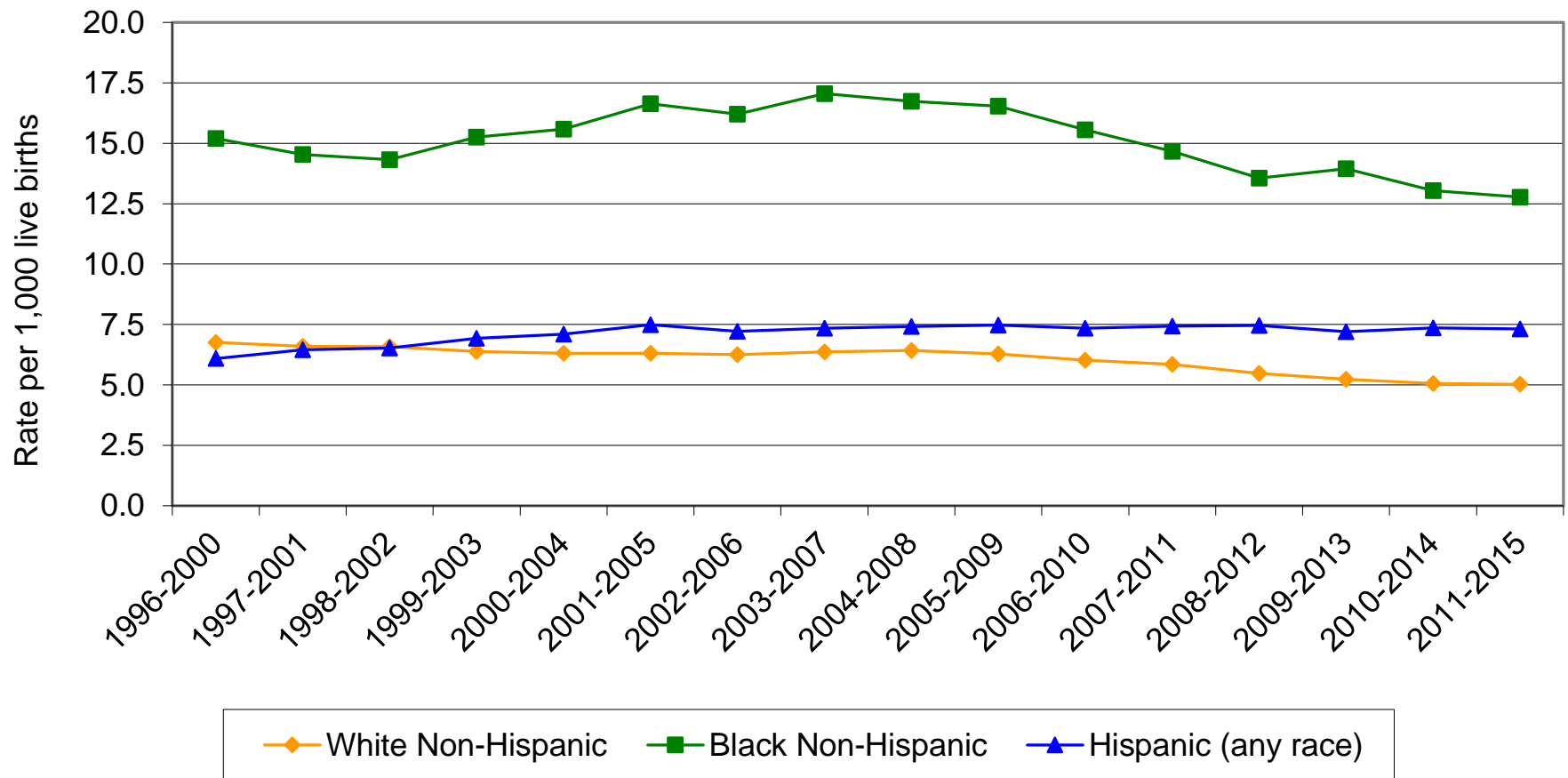


Table 3
 Infant Deaths and Mortality Rates*
 By Selected Population Group of Mothers‡
 Kansas, 1995-2015

Year	White Non-Hispanic†			Black Non-Hispanic†			Black NH‡ to White NH‡ Ratio of Rates	Hispanic Any Race			Total Infant Mortality Rate
	Live Births	Infant Deaths	Rate	Live Births	Infant Deaths	Rate		Live Births	Infant Deaths	Rate	
1996	29,473	212	7.2	2,738	63	23.0	3.2	3,198	18	5.6	8.2
1997	29,659	189	6.4	2,766	46	16.6	2.6	3,525	29	8.2	7.4
1998	30,389	209	6.9	2,746	27	9.8	1.4	3,873	25	6.5	6.9
1999	30,362	215	7.1	2,815	42	14.9	2.1	4,204	15	3.6	7.3
2000	30,538	192	6.3	2,822	33	11.7	1.9	4,742	32	6.7	6.7
2001	29,703	190	6.4	2,745	54	19.7	3.1	4,875	36	7.4	7.3
2002	29,811	187	6.3	2,845	44	15.5	2.5	5,006	40	8.0	7.2
2003	29,482	172	5.8	2,730	40	14.7	2.5	5,417	45	8.3	6.7
2004	29,624	200	6.8	2,782	46	16.5	2.4	5,458	28	5.1	7.2
2005	28,903	181	6.3	2,670	45	16.9	2.7	6,073	52	8.6	7.5
2006	29,392	181	6.2	2,801	49	17.5	2.8	6,568	41	6.2	7.2
2007	30,170	205	6.8	2,856	56	19.6	2.9	6,676	56	8.4	7.9
2008	29,863	184	6.2	2,936	39	13.3	2.2	6,781	57	8.4	7.2
2009	29,471	178	6.0	2,830	44	15.5	2.6	6,790	40	5.9	7.0
2010	29,000	142	4.9	2,780	33	11.9	2.4	6,407	50	7.8	6.3
2011	28,382	150	5.3	2,708	35	12.9	2.4	6,293	42	6.7	6.2
2012	28,995	145	5.0	2,682	38	14.2	2.8	6,286	54	8.6	6.3
2013	27,821	137	4.9	2,549	39	15.3	3.1	6,139	44	7.2	6.4
2014	28,009	146	5.2	2,629	29	11.0	2.1	6,129	40	6.5	6.3
2015	27,717	130	4.7	2,585	27	10.4	2.2	6,290	48	7.6	5.9

* Rate per 1,000 live births.

† Due to changes in the collection of the race item on certificates, use caution when comparing 2005-2015 data to prior years. See Technical Notes.

‡ NH = non-Hispanic, population group includes unknown Hispanic origin.

§ Other non-Hispanic data is not included in this table due to small numbers but is available upon request.

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
 Kansas Department of Health and Environment

Table 4
 Infant Deaths and Mortality Rates by County of Residence
 And Peer Group*
 Kansas, 2011-2015

County of Residence	Year					Total Infant Deaths	Total Live Births	Infant Mortality Rate†	95% Confidence Intervals	
	2011	2012	2013	2014	2015	2011-2015	2011-2015	2011-2015	Lower	Upper
Kansas	247	254	248	246	230	1,225	197,056	6.2	5.9	6.6
Allen	2	1	0	1	1	5	751	6.7 ‡	1.5	13.8
Anderson	0	0	2	1	1	4	475	8.4 ‡	na	na
Atchison	3	2	1	0	2	8	1,020	7.8 ‡	2.7	13.9
Barber	0	0	0	0	0	0	314	0.0	0.0	0.0
Barton	6	2	1	3	3	15	1,832	8.2	4.6	13.6
Bourbon	1	2	0	0	2	5	1,065	4.7 ‡	1.5	10.9
Brown	3	1	1	1	0	6	688	8.7 ‡	3.2	19.1
Butler	3	3	6	9	8	29	3,770	7.7	5.1	10.9
Chase	0	0	0	0	0	0	129	0.0	0.0	0.0
Chautauqua	1	0	0	0	0	1	186	na	na	na
Cherokee	3	0	0	0	0	3	1,191	na	1.4	9.9
Cheyenne	0	1	0	0	0	1	156	na	na	na
Clark	1	0	0	1	0	2	115	na	na	na
Clay	1	1	1	0	3	6	513	11.7 ‡	2.1	19.3
Cloud	1	1	0	0	0	2	574	na	na	na
Coffey	2	0	0	0	0	2	416	na	na	na
Comanche	0	0	0	0	1	1	120	na	0.0	0.0
Cowley	4	1	4	2	2	13	2,283	5.7	3.9	11.2
Crawford	2	3	3	1	1	10	2,527	4.0 ‡	2.2	7.8
Decatur	0	1	0	0	0	1	171	na	na	na
Dickinson	2	4	2	2	1	11	1,121	9.8	4.7	16.8
Doniphan	0	0	0	0	1	1	409	na	0.0	0.0
Douglas	1	6	5	7	6	25	6,240	4.0	2.4	5.6
Edwards	1	2	0	0	0	3	168	na	na	na
Elk	0	0	1	0	0	1	125	na	na	na
Ellis	5	2	1	3	4	15	1,874	8.0	3.3	11.1
Ellsworth	0	1	0	0	0	1	308	na	na	na
Finney	2	7	6	3	7	25	3,495	7.2	3.5	8.7
Ford	5	7	5	4	9	30	3,366	8.9	5.5	11.9
Franklin	2	3	1	5	2	13	1,593	8.2	3.9	13.0
Geary	8	4	6	7	8	33	5,189	6.4	4.6	9.3
Gove	0	1	0	0	0	1	174	na	na	na
Graham	0	1	0	1	0	2	123	na	na	na
Grant	0	2	0	0	1	3	615	na	na	na
Gray	1	0	2	0	1	4	439	9.1 ‡	na	na
Greeley	0	0	0	0	0	0	98	0.0	0.0	0.0
Greenwood	0	1	1	0	1	3	321	na	na	na
Hamilton	0	0	0	0	0	0	198	0.0	0.0	0.0
Harper	0	0	2	3	0	5	383	13.1 ‡	5.9	34.8
Harvey	2	3	4	3	3	15	2,161	6.9	3.8	11.2
Haskell	1	1	0	0	0	2	267	na	4.0	37.7
Hodgeman	0	0	0	0	1	1	109	na	0.0	0.0
Jackson	1	2	0	1	3	7	831	8.4 ‡	2.0	14.2
Jefferson	2	2	2	1	3	10	924	10.8 ‡	5.8	21.0
Jewell	0	0	0	0	0	0	141	0.0	0.0	0.0
Johnson	36	31	34	34	35	170	37,034	4.6	3.8	5.2
Kearny	1	0	0	0	1	2	305	na	na	na
Kingman	2	0	0	0	0	2	412	na	na	na
Kiowa	0	0	0	0	0	0	174	0.0	na	na
Labette	3	2	2	2	2	11	1,331	8.3	5.1	16.5
Lane	0	0	0	0	0	0	99	0.0	0.0	0.0
Leavenworth	3	2	5	5	5	20	4,888	4.1	2.4	6.2
Lincoln	0	0	0	0	1	1	158	na	0.0	0.0
Linn	0	2	0	1	2	5	509	9.8 ‡	na	na
Logan	0	0	0	0	0	0	1/9	0.0	na	na

Table 4
Infant Deaths and Mortality Rates by County of Residence
And Peer Group*
Kansas, 2011-2015

County of Residence	Year					Total Infant Deaths	Total Live Births	Infant Mortality Rate†	95% Confidence Intervals	
	2011	2012	2013	2014	2015	2011-2015	2011-2015	2011-2015	Lower	Upper
Lyon	4	5	3	3	2	17	2,082	8.2	5.5	14.2
McPherson	4	2	1	2	2	11	1,712	6.4	3.3	11.7
Marion	1	0	0	0	1	2	572	na	na	na
Marshall	4	0	0	1	0	5	624	8.0 ‡	3.7	21.9
Meade	1	0	0	0	0	1	310	na	na	na
Miami	1	2	0	4	0	7	1,805	3.9 ‡	3.0	10.7
Mitchell	0	0	0	1	0	1	399	na	na	na
Montgomery	3	4	0	3	4	14	2,286	6.1	2.1	8.1
Morris	1	0	0	2	0	3	312	na	na	na
Morton	0	0	0	0	0	0	192	0.0	0.0	0.0
Nemaha	1	3	2	2	1	9	708	12.7 ‡	5.0	22.7
Neosho	0	3	1	3	0	7	1,055	6.6 ‡	4.4	16.8
Ness	0	1	1	0	0	2	173	na	na	na
Norton	0	1	2	0	0	3	271	na	na	na
Osage	1	1	2	2	1	7	823	8.5 ‡	2.6	15.4
Osborne	1	1	1	1	0	4	221	na	na	na
Ottawa	0	0	0	0	0	0	282	0.0	na	na
Pawnee	0	2	0	0	2	4	337	11.9 ‡	na	na
Phillips	0	1	1	1	0	3	312	na	na	na
Pottawatomie	1	1	2	2	1	7	1,784	3.9 ‡	1.9	8.7
Pratt	1	0	1	4	0	6	724	8.3 ‡	4.0	20.8
Rawlins	1	0	0	0	0	1	130	na	na	na
Reno	7	3	14	6	4	34	3,664	9.3	7.0	13.6
Republic	0	0	1	1	0	2	244	na	na	na
Rice	1	0	0	4	0	5	623	8.0 ‡	3.6	21.1
Riley	2	9	7	7	3	28	5,385	5.2	3.5	7.6
Rooks	0	0	0	1	0	1	302	na	na	na
Rush	1	0	0	0	0	1	145	na	na	na
Russell	1	0	0	1	0	2	420	na	3.7	26.6
Saline	4	3	7	1	1	16	3,775	4.2	3.4	8.3
Scott	0	1	0	0	0	1	323	na	na	na
Sedgwick	52	61	62	43	41	259	37,836	6.8	6.4	8.0
Seward	0	4	3	5	3	15	2,226	6.7	3.4	10.4
Shawnee	17	10	15	12	18	72	11,856	6.1	4.5	7.3
Sheridan	0	1	1	0	0	2	140	na	na	na
Sherman	1	1	0	1	0	3	400	na	na	na
Smith	0	1	0	0	0	1	173	na	na	na
Stafford	0	0	0	0	0	0	243	0.0	0.0	0.0
Stanton	0	0	0	0	0	0	161	0.0	0.0	0.0
Stevens	0	1	0	0	0	1	416	na	na	na
Sumner	3	2	2	2	2	11	1,356	8.1	3.5	13.3
Thomas	0	0	0	2	1	3	560	na	na	na
Trego	0	0	0	1	0	1	166	na	na	na
Wabaunsee	1	0	0	0	0	1	448	na	na	na
Wallace	0	0	0	1	0	1	97	na	na	na
Washington	0	0	1	0	1	2	360	na	na	na
Wichita	0	1	0	0	0	1	127	na	na	na
Wilson	1	0	2	1	0	4	553	7.2 ‡	3.8	22.4
Woodson	0	0	0	0	0	0	154	0.0	na	na
Wyandotte	20	24	18	25	21	108	13,728	7.9	6.5	9.5
n.s.	0	0	0	0	0	0	4	0.0	0.0	0.0
Peer Group	9	13	5	7	5	39	6,543	6.0		
Frontier	23	18	18	26	14	99	14,241	7.0	4.1	8.0
Rural	52	52	38	41	51	234	32,531	7.2	6.0	8.8
Densely -Settled Rural	34	37	48	46	34	199	32,155	6.2	6.1	7.9
Semi-Urban	129	134	139	126	126	654	111,582	5.9	5.6	7.3
Urban	138	129	134	139	126	666	112,305	5.9	5.5	6.4

*See Technical Notes for Peer Group definitions.

†Rate per 1,000 live births.

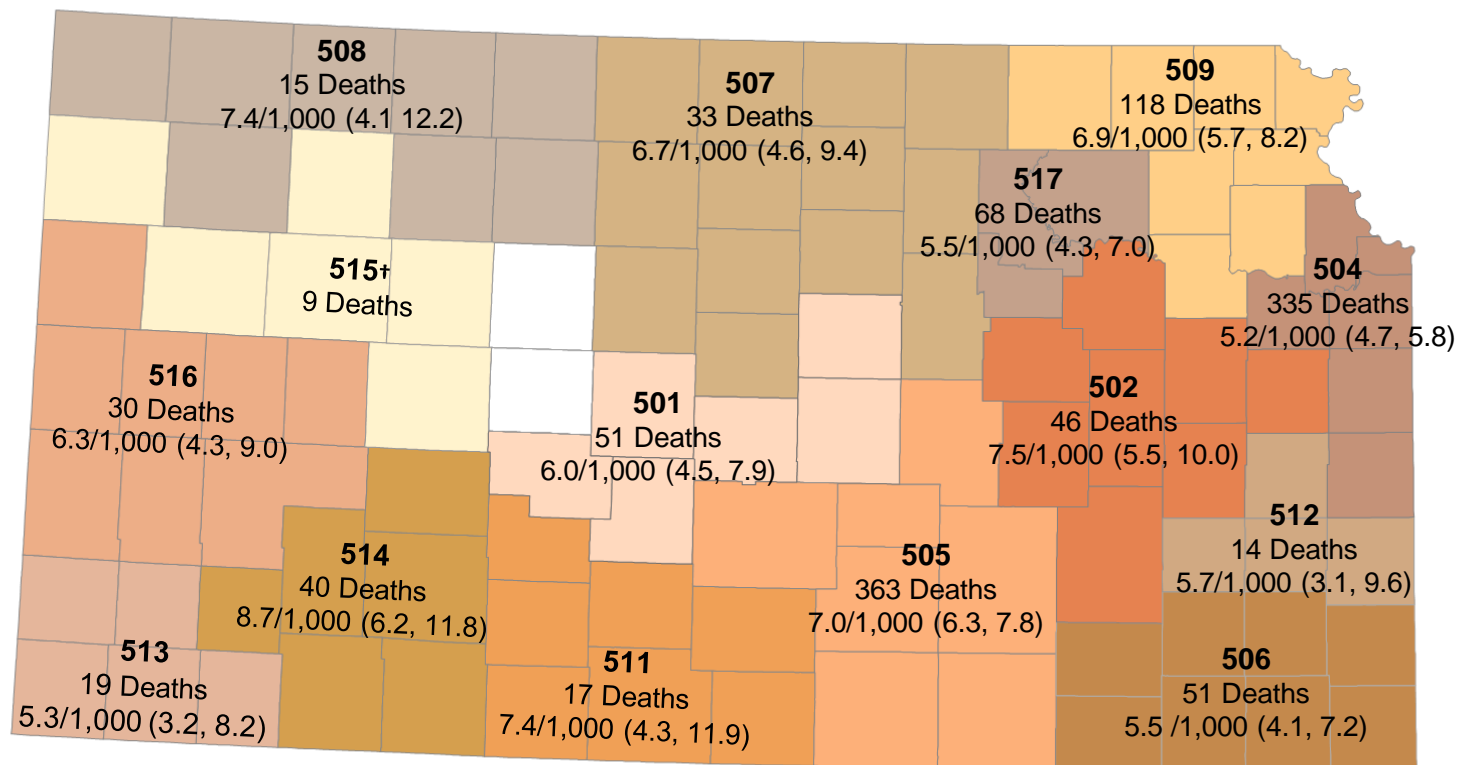
‡Rate has a relative standard error greater than 30%, should be used with caution since it doesn't meet the standard of reliability.

n/a = Rates with an relative standard error greater than 50% have been suppressed.

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Figure 5
Infant Deaths and Mortality (IM) Rates* with 95% Confidence Intervals
by Public Health Regions, 2011-2015



Kansas 5 Yr. IM Rate, 6.2/1,000 (5.9, 6.6)

Kansas Public Health Regions

501 - Central Kansas	502 - EC Coalition	504 - KC Metro
505 - KS SC Metro	506 - Lower 8 of SE KS	507 - NC KS Pub Health Initiative
508 - Northwest BT Region	509 - Northeast Corner	511 - SC Coalition
512 – SEK	513 - SW KS Health Initiative	514 - SW Surveillance
515 - WC Pub Health Initiative	516 - Western Pyramid	517 – Wildcat

*Rate per 1,000 live births

†Numbers too small to calculate rates (Relative Standard Error > 30), see methodology section

Residence data

Table 5
Infant Deaths by Cause of Death by Period of Death
Kansas, 2011-2015

Cause of Death (ICD-10 Code)	Age-Group of Infant						
	Under 1 Day	1-6 Days	Hebdomadal Deaths (under 7 days)	7-27 Days	Neonatal Deaths (under 28 days)	Post-Neonatal Deaths (28-364 days)	Under 1 Year
All Causes	541	132	673	158	831	394	1,225
Infectious and Parasitic Diseases (A00-B99)	0	0	0	1	1	14	15
Other Diseases and Disorders (C00-O99)	9	7	16	14	30	72	102
Certain Conditions Originating in the Perinatal Period (P00-P96)	406	75	481	76	557	11	568
Maternal Factors & Complications of Pregnancy, Labor and Delivery (P00-P04)	102	9	111	2	113	1	114
Disorders rel. to Short Gestation & Low Birth Weight (P07)	245	8	253	3	256	2	258
Birth Trauma (P10-P15)	0	0	0	0	0	0	0
Hypoxia and Birth Asphyxia (P20-P21)	6	3	9	2	11	0	11
Respiratory Distress of Newborn (P22)	4	5	9	3	12	0	12
Congenital Pneumonia (P23)	0	0	0	7	7	0	7
Other Respiratory Conditions of Newborn (P24-P28)	12	8	20	7	27	1	28
Bacterial Sepsis of Newborn (P36)	5	8	13	8	21	0	21
Omphalitis of Newborn w/wo Mild Hemorrhage (P38)	0	0	0	0	0	0	0
Fetal and Neonatal Hemorrhage (P50-P61)	5	15	20	11	31	2	33
Other Perinatal Conditions (P05 - P059, P08 -P089, P29 -P299, P35 -P359, P37 -P379, P39 -P399, P70 - P969)	27	19	46	32	78	5	83
Congenital Anomalies (Q00-Q99)	121	46	167	42	209	70	279
Symptoms and Abnormal Findings (R00-R99)	4	3	7	18	25	159	184
Sudden Infant Death Syndrome (R95)	0	2	2	7	9	104	113
Other Symptoms and Abnormal Findings (R00-R94, R96-R98)	0	0	0	0	0	1	1
Other Ill-defined and Unspecified Causes of Mortality (R99)	4	1	5	11	16	54	70
Accidental Suffocation and Strangulation in Bed (W75)	0	1	1	2	3	24	27
External Causes of Mortality (V01-W74,W76-Y89) excluding Suffocation in Bed (W75)	1	0	1	6	7	44	51
Sudden Unexpected Infant Deaths (SUID) (R95, R99, W75)	4	4	8	20	28	182	210

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 6
Infant Deaths by County of Residence
by Period of Death, Kansas, 2011-2015

County of Residence	Hebdomadal Deaths (under 7 days)	Neonatal Deaths (under 28 days)	Post-Neonatal Deaths (28-364 days)	Total Infant Deaths (under 1 year)
Kansas	673	831	394	1,225
Allen	3	3	2	5
Anderson	4	4	0	4
Atchison	3	4	4	8
Barber	0	0	0	0
Barton	10	12	3	15
Bourbon	1	3	2	5
Brown	4	4	2	6
Butler	13	17	12	29
Chase	0	0	0	0
Chautauqua	0	1	0	1
Cherokee	1	1	2	3
Cheyenne	1	1	0	1
Clark	2	2	0	2
Clay	2	2	4	6
Cloud	1	2	0	2
Coffey	2	2	0	2
Comanche	0	0	1	1
Cowley	8	9	4	13
Crawford	2	3	7	10
Decatur	0	1	0	1
Dickinson	5	6	5	11
Doniphan	1	1	0	1
Douglas	20	22	3	25
Edwards	3	3	0	3
Elk	1	1	0	1
Ellis	9	12	3	15
Ellsworth	1	1	0	1
Finney	11	14	11	25
Ford	16	20	10	30
Franklin	4	8	5	13
Geary	20	24	9	33
Gove	0	0	1	1
Graham	0	1	1	2
Grant	2	2	1	3
Gray	1	2	2	4
Greeley	0	0	0	0
Greenwood	1	1	2	3
Hamilton	0	0	0	0
Harper	4	5	0	5
Harvey	5	8	7	15
Haskell	2	2	0	2
Hodgeman	0	0	1	1
Jackson	3	4	3	7
Jefferson	4	6	4	10
Jewell	0	0	0	0
Johnson	115	133	37	170
Kearny	2	2	0	2
Kingman	1	1	1	2
Kiowa	0	0	0	0
Labette	8	9	2	11
Lane	0	0	0	0
Leavenworth	11	14	6	20
Lincoln	1	1	0	1
Linn	3	3	2	5
Logan	0	0	0	0

Table 6
Infant Deaths by County of Residence
by Period of Death, Kansas, 2011-2015

County of Residence	Hebdomadal Deaths (under 7 days)	Neonatal Deaths (under 28 days)	Post-Neonatal Deaths (28-364 days)	Total Infant Deaths (under 1 year)
Lyon	10	12	5	17
McPherson	6	10	1	11
Marion	1	1	1	2
Marshall	5	5	0	5
Meade	0	1	0	1
Miami	4	6	1	7
Mitchell	1	1	0	1
Montgomery	6	6	8	14
Morris	3	3	0	3
Morton	0	0	0	0
Nemaha	8	8	1	9
Neosho	1	3	4	7
Ness	1	1	1	2
Norton	2	2	1	3
Osage	2	2	5	7
Osborne	2	3	1	4
Ottawa	0	0	0	0
Pawnee	2	2	2	4
Phillips	2	3	0	3
Pottawatomie	3	5	2	7
Pratt	3	5	1	6
Rawlins	0	0	1	1
Reno	16	19	15	34
Republic	1	1	1	2
Rice	1	2	3	5
Riley	16	19	9	28
Rooks	0	0	1	1
Rush	0	1	0	1
Russell	0	1	1	2
Saline	9	10	6	16
Scott	1	1	0	1
Sedgwick	137	174	85	259
Seward	11	13	2	15
Shawnee	34	42	30	72
Sheridan	2	2	0	2
Sherman	3	3	0	3
Smith	1	1	0	1
Stafford	0	0	0	0
Stanton	0	0	0	0
Stevens	0	0	1	1
Sumner	4	6	5	11
Thomas	2	2	1	3
Trego	0	0	1	1
Wabaunsee	1	1	0	1
Wallace	1	1	0	1
Washington	1	2	0	2
Wichita	1	1	0	1
Wilson	2	2	2	4
Woodson	0	0	0	0
Wyandotte	56	71	37	108

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Figure 6
Five Year Average Infant Mortality Rates
by Period of Death
Kansas, 1996-2015

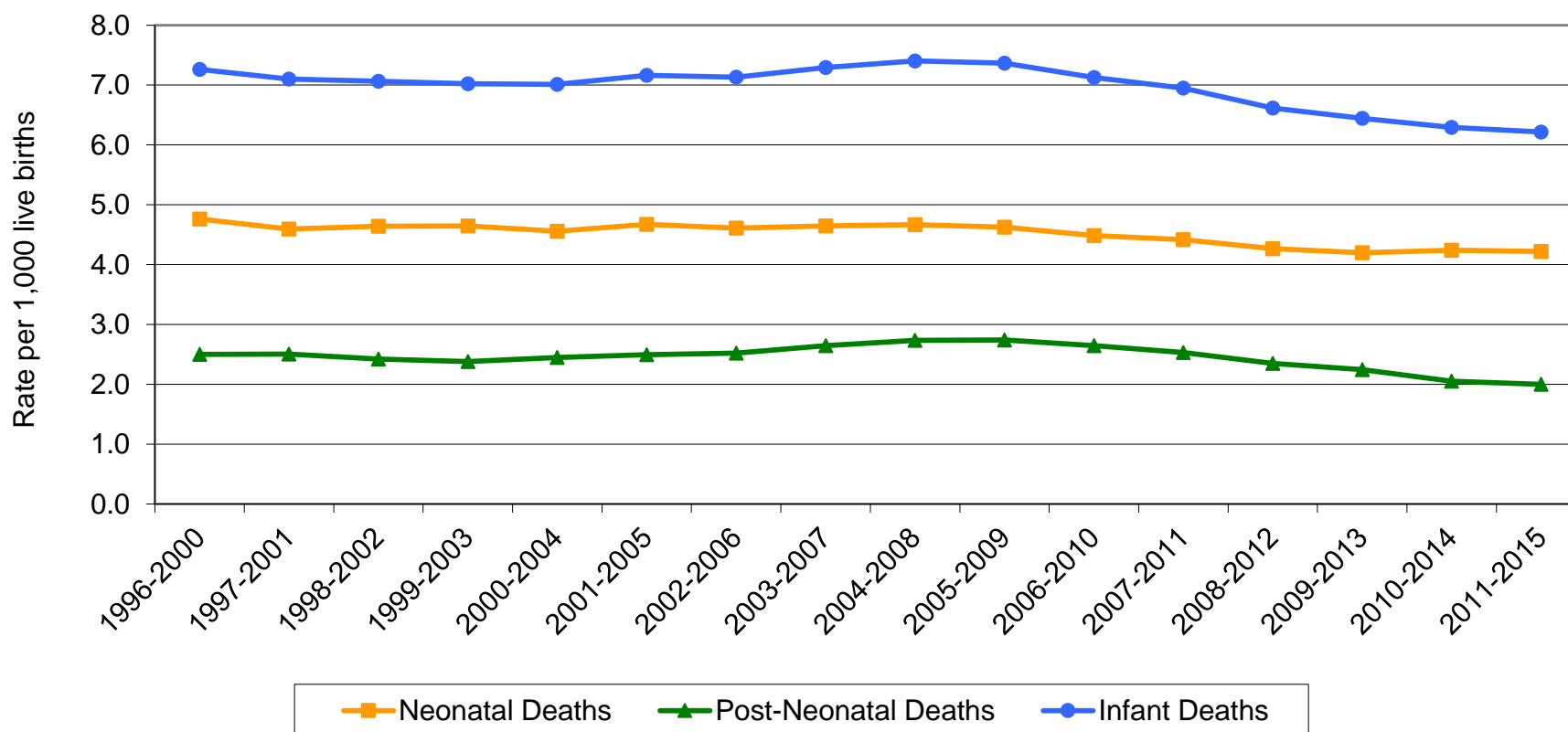


Table 7
Stillbirths by Cause of Death by Weeks Gestation
Kansas, 2011-2015

Cause of Death (ICD-10 Code)	Total Stillbirths	Weeks Gestation				
		Under 20	20-31	32-41	42 & Over	ns *
All Causes	994	12	549	427	2	4
Certain Conditions Originating in the Perinatal Period (P00-P96)	604	4	349	246	1	4
Fetus Affected by Maternal Conditions (P00)	81	0	50	31	0	0
Fetus Affected by Maternal Complications of Pregnancy (P01)	94	1	76	17	0	0
Fetus Affected by Complications of Placenta, Cord & Membrane (P02)	300	2	152	144	0	2
Fetus Affected by Complications of Labor and Delivery (P03)	9	0	5	3	0	1
Fetus Affected by Maternal Use of Tobacco, Alcohol, and Drugs of Abuse (P04)	8	0	6	2	0	0
Other Perinatal Conditions (P04 - P05, P08-P15, P22-P28, P35 -P39, P55, P57 -P94, P96)	73	1	26	45	1	0
Disorders Related to Short Gestation & Low Birth Weight (P07)	37	0	33	3	0	1
Hypoxia and Birth Asphyxia (P20-P21)	1	0	1	0	0	0
Cardiovascular Disorders (P24-P28)	1	0	0	1	0	0
Unspecified Cause (P95)	261	4	136	121	0	0
Congenital Anomalies (Q00-Q99)	110	2	52	55	1	0
All Other Causes	19	2	12	5	0	0

*ns = Not Stated.

Residence Data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Figure 7
Five Year Average Perinatal Period III Mortality Rates
by Period of Death
Kansas, 1996-2015

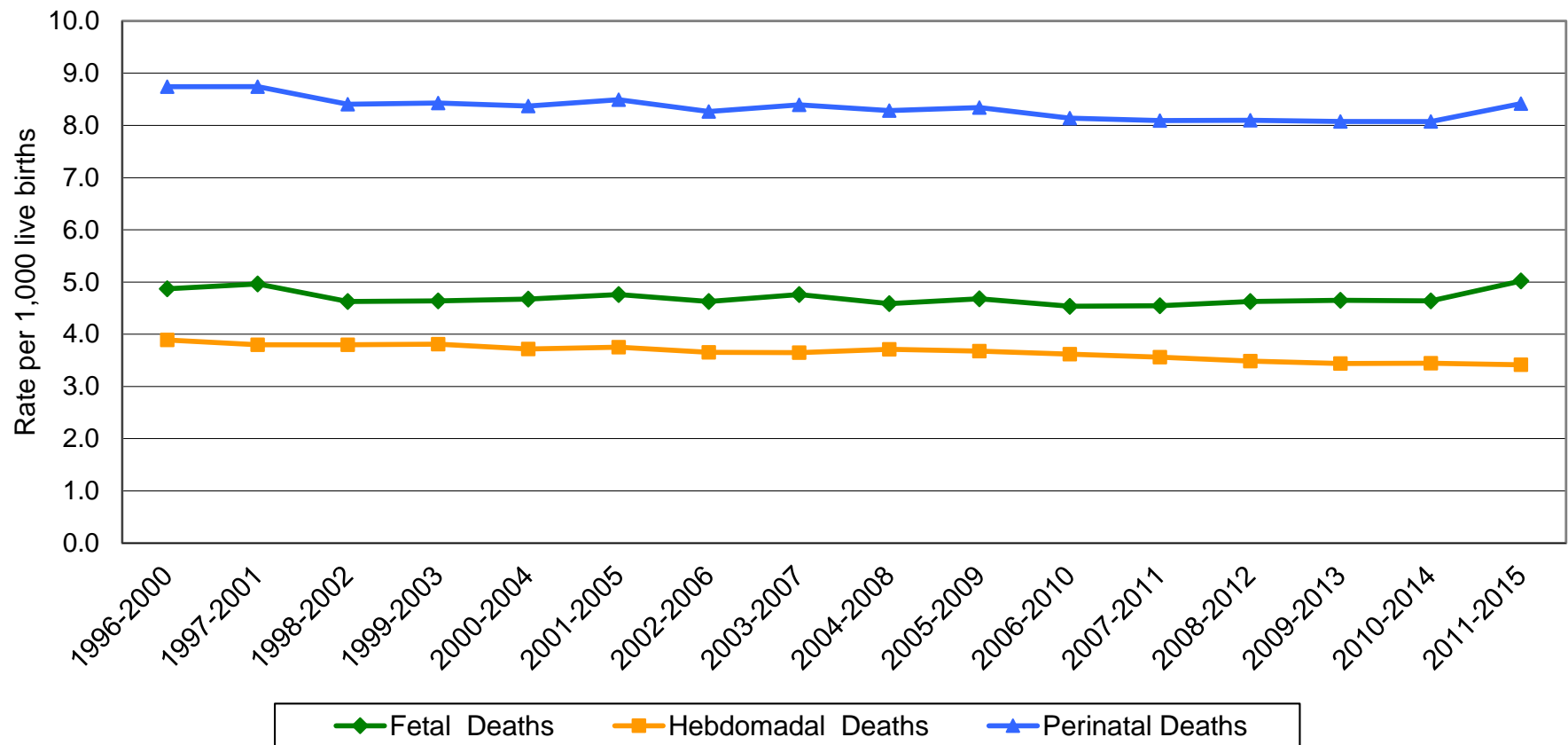


Table 8
Linked Infant Deaths
by Cause of Death by Gestational Age
Kansas, 2011-2015

Cause of Death	Total Deaths	Very Premature <32 weeks		Moderate Premature 32-33 weeks		Late Preterm 34-36 weeks		Total Preterm <37 weeks		Early Term 37-38 weeks		Term ≥39 weeks		ns*
		N	%	N	%	N	%	N	%	N	%	N	%	
Kansas	1,218	587	48.6	62	5.1	113	9.4	762	63.1	188	15.6	258	21.4	10
Infectious and Parasitic Diseases (A00-B99)	15	4	26.7	0	0.0	2	13.3	6	40.0	2	13.3	7	46.7	0
Other Diseases and Disorders (C00-O99)	101	36	35.6	6	5.9	8	7.9	50	49.5	22	21.8	29	28.7	0
Maternal Factors & Compl of Pregnancy, Labor and Delivery (P00-P04)	114	98	86.7	2	1.8	3	2.7	103	91.2	6	5.3	4	3.5	1
Disorders rel. to Short Gestation & Low Birth Weight (P07)	258	255	99.2	1	0.4	0	0.0	256	99.6	1	0.4	0	0.0	1
Hypoxia and Birth Asphyxia (P20-P21)	11	4	36.4	2	18.2	2	18.2	8	72.7	2	18.2	1	9.1	0
Respiratory Distress of Newborn (P22)	12	10	83.3	2	16.7	0	0.0	12	100.0	0	0.0	0	0.0	0
Congenital Pneumonia (P23)	7	4	57.1	1	14.3	1	14.3	6	85.7	0	0.0	1	14.3	0
Other Respiratory Conditions of Newborn (P24-P28)	28	19	67.9	3	10.7	1	3.6	23	82.1	3	10.7	2	7.1	0
Bacterial Sepsis of Newborn (P36)	21	13	61.9	1	4.8	2	9.5	16	76.2	2	9.5	3	14.3	0
Hemorrhagic and Hematolog Disorders of Fetus and Newborn (P50-P61)	33	24	75.0	1	3.1	0	0.0	25	78.1	3	9.4	4	12.5	1
Other Perinatal Conditions (P05, P08, P29, P35, P37, P39, P70-P96)	83	55	66.3	6	7.2	4	4.8	65	78.3	5	6.0	13	15.7	0
Congenital Anomalies (Q00-Q99)	278	48	17.5	32	11.6	62	22.5	142	51.6	66	24.0	67	24.4	3
Other Symptoms and Abnormal Findings (R00-R94, R96-R98)	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0	0
Sudden Infant Death Syndrome (R95)	111	6	5.4	2	1.8	14	12.6	22	19.8	31	27.9	58	52.3	0
Other Ill-Defined and Unspecified Causes of Mortality (R99)	68	6	9.1	0	0.0	9	13.6	15	22.7	26	39.4	25	37.9	2
Accidental Suffocation in Bed (W75)	27	0	0.0	1	3.8	3	11.5	4	15.4	5	19.2	17	65.4	1
External Causes of Mortality (V01-Y89), excluding sleep related deaths (W75)	50	5	10.2	2	4.1	2	4.1	9	18.4	14	28.6	26	53.1	1

*ns = Not stated.

Unknowns are excluded in calculating percents.

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 9
Linked Infant Deaths by Birth Characteristics
by Selected Population Groups of the Mother
Kansas, 2011-2015

Characteristics	All races and origins	White NH	Black NH	American Indian or Alaska Native NH	Asian or Pacific Islander	Hispanic	Multi Race	Other NH	Unknown
Total	1,218	704	168	11	27	226	61	11	10
Sex									
Female	535	308	79	3	14	96	26	5	4
Male	683	396	89	8	13	130	61	6	6
Plurality									
Single	1,040	588	138	9	25	207	55	10	8
Twin	164	106	27	2	2	18	6	1	2
Triplets or more	12	8	3	-	-	1	-	-	-
Plural	176	114	30	2	2	19	6	1	2
n.s.	2	2	-	-	-	-	-	-	-
Birth Order									
1	484	288	62	5	14	85	23	4	3
2	324	191	41	5	7	59	15	2	4
3	206	124	27	-	2	39	12	2	-
4	107	54	18	1	4	21	5	2	2
5 or more	95	45	20	-	-	22	6	1	1
n.s.	2	2	-	-	-	-	-	-	-
Birthweight									
Less than 2,500 grams	783	443	127	5	18	148	34	8	7
Less than 500 grams	301	153	75	4	6	52	11	3	3
500-1499 grams	295	163	30	1	4	62	13	1	4
1,500-2,499 grams	187	127	22	-	8	34	10	4	-
2,500 grams or more	427	267	46	4	7	78	27	3	3
n.s.	8	5	-	1	1	-	-	-	-
Gestational Age									
Premature (< 37 weeks)	762	425	122	6	18	147	29	7	8
Very Premature (< 32 wks)	587	315	107	6	13	111	23	5	7
Moderate Premature (32-33 wks)	62	44	4	-	2	10	1	1	-
Late Premature (34-36 wks)	113	66	11	-	3	26	5	1	1
Early Term (37-38 weeks)	188	117	19	2	3	34	11	1	1
Term (39-45 weeks)	258	154	27	3	5	44	21	3	1
n.s.	10	8	-	-	1	1	-	-	-
Mother's Age									
Under 20 years	122	65	13	2	3	32	5	2	-
20-24 years	357	184	57	4	6	71	29	2	4
25-29 years	362	222	55	2	6	60	12	3	2
30-34 years	233	149	26	3	10	30	11	2	2
35-39 years	112	66	15	-	2	23	3	2	1
40-60 years	28	14	2	-	-	10	1	-	1
n.s.	4	4	-	-	-	-	-	-	-
Marital Status									
Married	610	415	32	4	19	108	22	6	4
Unmarried	597	282	135	7	7	117	39	5	5
n.s.	11	7	1	-	1	1	-	-	1

Table 9
Linked Infant Deaths by Birth Characteristics
by Selected Population Groups of the Mother
Kansas, 2011-2015

Characteristics	All races and origins	White NH	Black NH	American Indian or Alaska Native NH	Asian or Pacific Islander	Hispanic	Multi Race	Other NH	Unknown
Payor									
Medicaid	523	274	106	4	8	87	33	5	6
Private Insurance	498	343	40	4	14	70	19	5	3
Self Pay	101	34	10	1	3	47	5	1	-
Indian Health Service	-	-	-	-	-	-	-	-	-
Tricare	49	27	7	1	1	9	4	-	-
Other Government	9	6	1	-	-	2	-	-	-
Other	13	4	3	-	-	6	-	-	-
n.s.	25	16	1	1	1	5	-	-	1
Mother's Education*									
8th Grade or Less	32	6	3	-	1	20	-	1	1
9-12 Grade, No Diploma	69	23	11	1	3	29	1	1	-
H.S. or GED	176	86	38	3	4	33	7	2	3
Some College, No Degree	153	101	24	-	1	17	9	1	-
Associate Degree	77	52	13	-	1	8	3	-	-
Bachelor's Degree	142	115	6	1	4	13	-	2	1
Master's Degree	59	49	1	-	2	-	6	-	1
Doctorate	13	11	-	-	2	-	-	-	-
n.s.	14	8	2	-	-	3	1	-	-
*Mother's Over 24 years	735	451	98	5	17	123	27	7	6
Prenatal Care									
None	69	30	17	1	2	14	4	-	1
Month 1	46	27	8	1	1	8	-	-	1
Month 2	385	233	52	2	6	64	23	2	2
Month 3	365	235	39	3	7	60	15	2	3
First Trimester	796	495	99	6	14	132	38	4	6
Month 4	124	59	24	1	2	28	7	3	-
Month 5	71	35	9	-	4	15	5	1	2
Month 6	30	17	2	1	-	3	4	2	1
Second Trimester	225	111	35	2	6	46	16	6	3
Month 7	20	9	1	-	1	8	1	-	-
Month 8	10	4	2	1	-	3	-	-	-
Month 9	5	1	1	-	-	3	-	-	-
Third Trimester	35	14	4	1	1	14	1	-	-
n.s.	93	54	13	1	2	20	2	1	-
Adequacy of Prenatal Care									
Adequate Plus	550	341	82	1	11	87	21	5	2
Adequate	281	164	28	4	6	54	19	2	4
Intermediate	56	30	10	-	1	13	2	-	-
Inadequate	209	99	30	3	7	48	15	3	4
n.s.	122	70	18	3	2	24	4	1	-
Smoking During Pregnancy									
Ever Smoked During Pregnancy	251	176	35	3	-	15	20	1	1
Smoking Status Known	1,218	704	168	11	27	226	61	11	10

Residence data

n.s. = not stated

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 10
Live Births by Birth Characteristics
by Selected Population Groups of the Mother
Kansas, 2011-2015

Characteristics	All races and origins	White NH	Black NH	American Indian or Alaska Native NH	Asian or Pacific Islander	Hispanic	Multi Race	Other NH	n.s.
Total	197,056	140,924	13,153	1,030	5,912	31,137	3,491	1,301	108
Sex									
Female	96,323	68,801	6,423	517	2,926	15,248	1,686	669	53
Male	100,732	72,123	6,730	513	2,986	15,888	1,805	632	55
Plurality									
Single	190,539	135,969	12,640	993	5,741	30,428	3,402	1,270	96
Twin	6,285	4,773	503	34	162	691	86	28	8
Triplets or more	228	182	10	3	9	18	3	3	-
Plural	6,513	4,955	513	37	171	709	89	31	8
n.s.	4	-	-	-	-	-	-	-	4
Birth Order									
1	72,091	53,164	4,555	322	2,535	9,439	1,541	491	44
2	62,190	45,920	3,724	295	2,149	8,681	974	423	24
3	36,072	25,116	2,506	225	787	6,649	539	232	18
4	15,998	10,322	1,236	95	270	3,730	247	90	8
5 or more	10,705	6,402	1,132	93	171	2,638	190	65	14
n.s.	-	-	-	-	-	-	-	-	-
Birthweight									
Less than 2,500 grams	13,934	9,274	1,718	67	496	1,977	273	118	11
Less than 500 grams	326	167	86	2	6	54	6	3	2
500-1499 grams	2,235	1,453	325	10	63	322	47	11	4
1,500-2,499 grams	11,373	7,654	1,307	55	427	1,601	220	104	5
2,500 grams or more	183,101	131,642	11,435	963	5,416	29,158	3,218	1,183	86
n.s.	21	8	-	-	-	2	-	-	11
Gestational Age									
Premature (< 37 weeks)	17,520	12,128	1,690	120	511	2,574	373	116	8
Very Premature (< 32 wks)	2,932	1,898	445	12	80	419	57	16	5
Moderate Premature (32-33 wks)	2,164	1,527	195	10	51	341	30	10	-
Late Premature (34-36 wks)	12,424	8,703	1,050	98	380	1,814	286	90	3
Early Term (37-38 weeks)	47,797	33,411	3,469	263	1,573	7,842	910	310	19
Term (39-45 weeks)	131,631	95,322	7,985	647	3,826	20,703	2,207	874	67
n.s.	108	63	9	-	2	18	1	1	14
Mother's Age									
Under 20 years	14,959	8,363	1,568	106	161	4,149	545	63	4
20-24 years	48,667	32,333	4,662	340	666	9,150	1,234	262	20
25-29 years	62,134	46,734	3,467	310	1,878	8,298	966	451	30
30-34 years	48,726	37,458	2,302	179	2,040	5,860	520	337	30
35-39 years	18,760	13,472	949	76	951	2,957	191	149	15
40-60 years	3,801	2,562	204	19	215	722	35	39	5
n.s.	9	2	1	-	1	1	-	-	4
Marital Status									
Married	124,963	98,129	3,812	374	5,067	14,926	1,482	1,106	67
Unmarried	72,000	42,736	9,338	656	841	16,197	2,007	195	30
n.s.	93	59	3	-	4	14	2	-	11

Table 10
Live Births by Birth Characteristics
by Selected Population Groups of the Mother
Kansas, 2011-2015

Characteristics	All races and origins	White NH	Black NH	American Indian or Alaska Native NH	Asian or Pacific Islander	Hispanic	Multi Race	Other NH	n.s.
Payor									
Medicaid	64,433	39,991	8,457	572	1,034	12,140	1,783	431	25
Private Insurance	103,866	86,370	2,974	280	4,019	8,517	1,191	480	35
Self Pay	14,000	4,812	562	28	443	7,767	114	249	25
Indian Health Service	123	29	2	68	-	11	12	1	-
Tricare	10,819	7,772	972	50	323	1,304	327	66	5
Other Government	1,251	721	58	16	32	386	28	10	-
Other	1,609	852	96	13	49	525	21	52	1
n.s.	955	377	32	3	12	487	15	12	17
Mother's Education*									
8th Grade or Less	4,492	764	138	7	165	3,217	14	185	2
9-12 Grade, No Diploma	8,214	3,112	660	71	214	3,958	126	70	3
H.S. or GED	21,388	13,669	1,906	161	731	4,421	331	162	7
Some College, No Degree	26,283	19,994	2,121	165	639	2,738	503	115	8
Associate Degree	13,488	11,141	701	65	286	1,050	198	43	4
Bachelor's Degree	39,946	35,073	880	87	1,585	1,701	358	241	21
Master's Degree	15,105	12,889	385	26	1,050	498	142	111	4
Doctorate	4,079	3,382	98	1	393	129	35	38	3
n.s.	426	202	33	1	21	125	5	11	28
*Mother's Over 24 years									
Prenatal Care									
None	1,687	772	268	20	53	513	27	25	9
Month 1	5,268	3,781	331	30	164	831	91	33	7
Month 2	69,930	53,552	3,830	287	2,282	8,547	1,061	355	16
Month 3	79,302	59,052	4,736	392	2,157	11,082	1,423	417	43
First Trimester	154,500	116,385	8,897	709	4,603	20,460	2,575	805	66
Month 4	18,748	11,739	1,645	124	541	4,161	364	166	8
Month 5	8,678	4,954	870	68	282	2,226	189	86	3
Month 6	4,745	2,565	495	35	163	1,293	140	52	2
Second Trimester	32,171	19,258	3,010	227	986	7,680	693	304	13
Month 7	3,055	1,628	326	27	85	863	82	39	5
Month 8	2,026	1,045	224	22	79	588	44	23	1
Month 9	1,022	532	103	12	28	310	27	9	1
Third Trimester	6,103	3,205	653	61	192	1,761	153	71	7
n.s.	2,595	1,304	325	13	78	723	43	96	13
Adequacy of Prenatal Care									
Adequate Plus	59,681	45,590	3,528	296	1,657	7,258	1,106	224	22
Adequate	99,790	74,620	5,720	430	3,087	13,794	1,602	499	38
Intermediate	11,732	6,705	1,100	82	354	3,062	187	231	11
Inadequate	22,234	12,017	2,401	200	721	6,106	527	241	21
n.s.	3,619	1,992	404	22	93	917	69	106	16
Smoking During Pregnancy									
Ever Smoked During Pregnancy	24,996	20,445	1,920	270	140	1,388	794	32	7
Smoking Status Known	197,056	140,924	13,153	1,030	5,912	31,137	3,491	1,301	108

Residence data

n.s. = not stated

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Technical Notes

Data for 2005 and years following are based on Kansas implementation of the 2003 revision of the U.S. Standard Certificates of Live Birth, Death, and Stillbirth. Data for prior years is based on the 1989 revision of the U.S. Standard Certificate of Live Birth, Death, and Stillbirth.

Data analysis involving the 2005 Kansas Certificate of Live Birth is affected in several ways:

- Changes in both question wording and sources for the information collected make it inappropriate to evaluate trends across 2004 and 2005 in some variables such as month prenatal care began and education level
- Calculating Month Prenatal Care Began – prior to 2005 – the mother was asked for the month prenatal care began. Starting in 2005, the dates used to calculate the month prenatal care began included the first day of the last menses before pregnancy and the date of the first prenatal visit. This change makes rates calculated after 2004 incompatible with earlier years. Such comparisons are inappropriate.
- KDHE publishes data on resident births and deaths. If the event occurs out of state and the state is not using the 2003 revision of the birth certificate, missing data may result. This is an important factor in border counties.
- KDHE excludes unknowns from the denominator for all calculations that result in percentage rates involving birth data. Other states may choose to include unknowns in the denominator. The Kansas method provides a more accurate representation of the rates.
- The 2003 revision process resulted in recommendations that the prenatal care information be gathered from the prenatal care or medical records, whereas the 1989 revision did not recommend a source for these data. In the case of premature births, sometimes these records aren't available when the infant is delivered.
- Infant mortality rates reported by NCHS may vary slightly from rates reported by KDHE. NCHS rates are based on data reported to it by all states. Some of those out-of-state occurrence infant deaths may not be reported to KDHE in time for inclusion in the respective year's *Annual Summary of Vital Statistics* or subsequent reports.
- Percentages may not add to 100 percent due to rounding.

Beginning in July 2014, requirements for reporting stillbirths or fetal deaths to the Kansas Department of Health and Environment changed. All stillbirths in which the unborn child is 20 weeks gestation and greater must now be reported. The old law required stillbirths to be reported when fetal weight was greater than 350 grams. The change may result in slightly different counts because of the different definitions of stillbirth and implementation occurring mid-year. The reporting certificate did not change.

Population Groups

This report uses the concept of reporting race and Hispanic origin combined into distinct categories of population groups. This was done to preserve the self-reported information on race and origin reported in the expanded categories. The use of population groups assures a better uniformity of the numerators and denominators in rate calculations.

Because of different tabulation methods, totals for population groups may not equal those tabulated by either race or Hispanic origin individually. Rates calculated exclusively on Hispanic origin treat unknowns differently.

The aggregation grid for population groups is listed on page 172 of the *Annual Summary of Vital Statistics, 2014*. Application of this grid assures that every combination of race and origin is assigned to a population group. In instances where the Hispanic origin of an individual is unknown, the person is assigned to a population group solely on the basis of race and is considered non-Hispanic.

Peer Groups

For various demographic studies, it is useful to consider groups of counties with similar characteristics. "Peer Groups" of counties, as used in this summary, are defined as those with similar population density based on a method derived by the KDHE Bureau of Community Health Systems. (See Appendix 1 for county tables indicating population density peer group membership before and after the 2010 U.S. Census.)

Frontier counties are defined as those with less than 6.0 persons per square mile, Rural counties as those with 6.0 - 19.9 persons per square mile, Densely-Settled Rural counties as those with 20.0 - 39.9 persons per square mile, Semi-Urban counties as those with 40.0 - 149.9 persons per square mile, and Urban counties as those with 150.0 or more persons per square mile. These designations should *not* be confused with the USCB definitions of urban and rural areas.

The KDHE Bureau of Epidemiology and Public Health Informatics applies these definitions, updating the groups with every decennial census. Based on the 2010 U.S. Census, eight Kansas counties changed peer groups. In order to facilitate a time series comparison, Peer-Group statistics for prior years are based on the Peer-Group in effect during that decade [2]. Sources for calculation of population densities are population figures from the 2010 U.S. Census and land areas from the 2010 U.S. Census.

APPENDIX 1 Kansas County Codes and Groupings

County Name	FIPS Code	Abbreviation	Population Density Peer Group (2010)	Population Density Peer Group (2000)
Allen	001	AL	Densely-Settled Rural	Densely-Settled Rural
Anderson	003	AN	Rural	Rural
Atchison	005	AT	Densely-Settled Rural	Densely-Settled Rural
Barber	007	BA	Frontier	Frontier
Barton	009	BT	Densely-Settled Rural	Densely-Settled Rural
Bourbon	011	BB	Densely-Settled Rural	Densely-Settled Rural
Brown	013	BR	Rural	Rural
Butler	015	BU	Semi-Urban	Semi-Urban
Chase	017	CS	Frontier	Frontier
Chautauqua	019	CQ	Frontier	Rural
Cherokee	021	CK	Densely-Settled Rural	Densely-Settled Rural
Cheyenne	023	CN	Frontier	Frontier
Clark	025	CA	Frontier	Frontier
Clay	027	CY	Rural	Rural
Cloud	029	CD	Rural	Rural
Coffey	031	CF	Rural	Rural
Comanche	033	CM	Frontier	Frontier
Cowley	035	CL	Densely-Settled Rural	Densely-Settled Rural
Crawford	037	CR	Semi-Urban	Semi-Urban
Decatur	039	DC	Frontier	Frontier
Dickinson	041	DK	Densely-Settled Rural	Densely-Settled Rural
Doniphan	043	DP	Densely-Settled Rural	Densely-Settled Rural
Douglas	045	DG	Urban	Urban
Edwards	047	ED	Frontier	Frontier
Elk	049	EK	Frontier	Frontier
Ellis	051	EL	Densely-Settled Rural	Densely-Settled Rural
Ellsworth	053	EW	Rural	Rural
Finney	055	FI	Densely-Settled Rural	Densely-Settled Rural
Ford	057	FO	Densely-Settled Rural	Densely-Settled Rural
Franklin	059	FR	Semi-Urban	Semi-Urban
Geary	061	GE	Semi-Urban	Semi-Urban
Gove	063	GO	Frontier	Frontier
Graham	065	GH	Frontier	Frontier
Grant	067	GT	Rural	Rural
Gray	069	GY	Rural	Rural
Greeley	071	GL	Frontier	Frontier
Greenwood	073	GW	Frontier	Rural
Hamilton	075	HM	Frontier	Frontier
Harper	077	HP	Rural	Rural
Harvey	079	HV	Semi-Urban	Semi-Urban
Haskell	081	HS	Rural	Rural
Hodgeman	083	HG	Frontier	Frontier
Jackson	085	JA	Densely-Settled Rural	Rural
Jefferson	087	JF	Densely-Settled Rural	Densely-Settled Rural
Jewell	089	JW	Frontier	Frontier
Johnson	091	JO	Urban	Urban
Kearny	093	KE	Frontier	Frontier
Kingman	095	KM	Rural	Rural
Kiowa	097	KW	Frontier	Frontier
Labette	099	LB	Densely-Settled Rural	Densely-Settled Rural
Lane	101	LE	Frontier	Frontier
Leavenworth	103	LV	Urban	Semi-Urban
Lincoln	105	LC	Frontier	Frontier
Linn	107	LN	Rural	Rural

County Name	FIPS Code	Abbreviation	Population Density Peer Group (2010)	Population Density Peer Group (2000)
Logan	109	LG	Frontier	Frontier
Lyon	111	LY	Densely-Settled Rural	Semi-Urban
McPherson	113	MP	Densely-Settled Rural	Densely-Settled Rural
Marion	115	MN	Rural	Rural
Marshall	117	MS	Rural	Rural
Meade	119	ME	Frontier	Frontier
Miami	121	MI	Semi-Urban	Semi-Urban
Mitchell	123	MC	Rural	Rural
Montgomery	125	MG	Semi-Urban	Semi-Urban
Morris	127	MR	Rural	Rural
Morton	129	MT	Frontier	Frontier
Nemaha	131	NM	Rural	Rural
Neosho	133	NO	Densely-Settled Rural	Densely-Settled Rural
Ness	135	NS	Frontier	Frontier
Norton	137	NT	Rural	Rural
Osage	139	OS	Densely-Settled Rural	Densely-Settled Rural
Osborne	141	OB	Frontier	Frontier
Ottawa	143	OT	Rural	Rural
Pawnee	145	PN	Rural	Rural
Phillips	147	PL	Rural	Rural
Pottawatomie	149	PT	Densely-Settled Rural	Densely-Settled Rural
Pratt	151	PR	Rural	Rural
Rawlins	153	RA	Frontier	Frontier
Reno	155	RN	Semi-Urban	Semi-Urban
Republic	157	RP	Rural	Rural
Rice	159	RC	Rural	Rural
Riley	161	RL	Semi-Urban	Semi-Urban
Rooks	163	RO	Frontier	Rural
Rush	165	RH	Frontier	Frontier
Russell	167	RS	Rural	Rural
Saline	169	SA	Semi-Urban	Semi-Urban
Scott	171	SC	Rural	Rural
Sedgwick	173	SG	Urban	Urban
Seward	175	SW	Densely-Settled Rural	Densely-Settled Rural
Shawnee	177	SN	Urban	Urban
Sheridan	179	SD	Frontier	Frontier
Sherman	181	SH	Frontier	Rural
Smith	183	SM	Frontier	Frontier
Stafford	185	SF	Frontier	Rural
Stanton	187	ST	Frontier	Frontier
Stevens	189	SV	Rural	Rural
Sumner	191	SU	Densely-Settled Rural	Densely-Settled Rural
Thomas	193	TH	Rural	Rural
Trego	195	TR	Frontier	Frontier
Wabaunsee	197	WB	Rural	Rural
Wallace	199	WA	Frontier	Frontier
Washington	201	WS	Rural	Rural
Wichita	203	WH	Frontier	Frontier
Wilson	205	WL	Rural	Rural
Woodson	207	WO	Rural	Rural
Wyandotte	209	WY	Urban	Urban

Kansas Department of Health and Environment
Office of Vital Statistics

CERTIFICATE OF LIVE BIRTH

115-

State File Number

1. CHILD'S NAME (First, Middle, Last, Suffix)			2. DATE OF BIRTH (Month, Day, Year)		3. TIME OF BIRTH M		
4. SEX		5. BIRTH WEIGHT (Grams)		6. CITY, TOWN, OR LOCATION OF BIRTH		7. COUNTY OF BIRTH	
8. PLACE OF BIRTH <input type="checkbox"/> Hospital <input type="checkbox"/> Freestanding Birthing Center <input type="checkbox"/> Home Birth <input type="checkbox"/> Clinic/Doctor's Office <input type="checkbox"/> Other (Specify) _____				9. FACILITY NAME (If not institution, give street and number)			
10. I CERTIFY THAT THE STATED INFORMATION CONCERNING THIS CHILD IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF. Certifier's Signature ➤ _____			11. DATE SIGNED (Month, Day, Year)		12. ATTENDANT'S NAME AND TITLE (Type) Name _____ <input type="checkbox"/> M.D. <input type="checkbox"/> D.O. <input type="checkbox"/> C.N.M. <input type="checkbox"/> Other Midwife <input type="checkbox"/> Other (Specify) _____		
13. Certifier's Name and Title (Type) Name _____ <input type="checkbox"/> M.D. <input type="checkbox"/> D.O. <input type="checkbox"/> Hosp Adm. <input type="checkbox"/> C.N.M. <input type="checkbox"/> Other Midwife <input type="checkbox"/> Other (Specify) _____			14. ATTENDANT'S MAILING ADDRESS (Street and Number or Rural Route, City, or Town, State, Zip Code)				
15. MOTHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)				16. MOTHER'S LAST NAME PRIOR TO FIRST MARRIAGE			
17. DATE OF BIRTH (Month, Day, Year)		18. BIRTHPLACE (State, Territory, or Foreign Country)		19. PRESENT RESIDENCE-STATE			
20. COUNTY		21. CITY, TOWN, OR LOCATION		22. STREET AND NUMBER OF PRESENT RESIDENCE			
23. ZIP CODE		24. INSIDE CITY LIMITS? <input type="checkbox"/> YES <input type="checkbox"/> NO		25. MOTHER'S MAILING ADDRESS (If same as residence, leave blank)			
26. FATHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)			27. DATE OF BIRTH (Month, Day, Year)		28. BIRTHPLACE (State, Territory, or Foreign Country)		
29. PARENTS REQUEST SOCIAL SECURITY NUMBER ISSUANCE? <input type="checkbox"/> YES <input type="checkbox"/> NO			30. IMMUNIZATION REGISTRY I wish to enroll my child in the Immunization Registry <input type="checkbox"/> YES <input type="checkbox"/> NO				
31. I CERTIFY THAT THE PERSONAL INFORMATION PROVIDED ON THE CERTIFICATE IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. Signature of Parent (or Other Informant) ➤ _____			32. DATE SIGNED (Month, Day, Year)		33. DATE FILED BY STATE REGISTRAR (Month, Day, Year) (Vital Statistics only)		

34. IF HOME BIRTH, WAS DELIVERY PLANNED AT HOME? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown					
35. MOTHER'S SOCIAL SECURITY NUMBER			36. FATHER'S SOCIAL SECURITY NUMBER		
37a. WAS MOTHER EVER MARRIED? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		37b. MOTHER MARRIED? (At birth, conception or any time between) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
37c. IF NO, HAS PATERNITY ACKNOWLEDGMENT BEEN SIGNED? <input type="checkbox"/> Yes <input type="checkbox"/> No		37d. MOTHER REFUSES TO GIVE HUSBAND'S INFORMATION <input type="checkbox"/> Yes <input type="checkbox"/> No			
38. WHAT IS THE PRIMARY LANGUAGE SPOKEN IN THE HOME? <input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Vietnamese <input type="checkbox"/> German <input type="checkbox"/> French <input type="checkbox"/> Russian <input type="checkbox"/> Ukrainian <input type="checkbox"/> Mandarin <input type="checkbox"/> Cantonese <input type="checkbox"/> Sign Language <input type="checkbox"/> Other (Specify) _____					
39. PARENT'S HISPANIC ORIGIN (Check the box or boxes that best describes whether the parent is Spanish, Hispanic, or Latino. Check the "No" box if the parent is not Spanish, Hispanic, or Latino.)		40. PARENT'S RACE (Check one or more races to indicate what you consider yourself to be.)			
39a. MOTHER <input type="checkbox"/> No, not Spanish/Hispanic/Latina <input type="checkbox"/> Yes, Mexican/Mexican American/Chicana <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, Central American <input type="checkbox"/> Yes, South American <input type="checkbox"/> Yes, other Spanish/Hispanic/Latina (Specify) _____ <input type="checkbox"/> Unknown		39b. FATHER <input type="checkbox"/> No, not Spanish/Hispanic/Latino <input type="checkbox"/> Yes, Mexican/Mexican American/Chicano <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, Central American <input type="checkbox"/> Yes, South American <input type="checkbox"/> Yes, other Spanish/Hispanic/Latino (Specify) _____ <input type="checkbox"/> Unknown		40a. MOTHER <input type="checkbox"/> White <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Black or African American <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> American Indian or Alaska Native (Name of the enrolled or principal tribes) _____ <input type="checkbox"/> Asian Indian <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Chinese <input type="checkbox"/> Samoan <input type="checkbox"/> Filipino <input type="checkbox"/> Other Pacific Islander (Specify) _____ <input type="checkbox"/> Japanese <input type="checkbox"/> Unknown <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Other Asian (Specify) _____	
41. ANCESTRY - What is the parents' ancestry or ethnic origin? - Italian, German, Dominican, Vietnamese, Hmong, French Canadian, etc. (Specify below)		42. OCCUPATION AND BUSINESS/INDUSTRY			
		Occupation		Business/Industry (Do not give name of company.)	
41a. MOTHER		42a. MOTHER (Most recent)		42c. MOTHER	
41b. FATHER		42b. FATHER (Usual)		42d. FATHER	
43. EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of delivery.)					
43a. MOTHER'S EDUCATION		43b. FATHER'S EDUCATION			
<input type="checkbox"/> 8 th grade or less <input type="checkbox"/> Some College credit, but no degree <input type="checkbox"/> Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA) <input type="checkbox"/> Unknown		<input type="checkbox"/> 8 th grade or less <input type="checkbox"/> Some College credit, but no degree <input type="checkbox"/> Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)		<input type="checkbox"/> 9 th - 12 th grade; no diploma <input type="checkbox"/> Associate degree (e.g., AA, AS) <input type="checkbox"/> Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD) <input type="checkbox"/> High school graduate or GED <input type="checkbox"/> Bachelor's degree (e.g., BA, AB, BS)	
44. PREVIOUS LIVE BIRTHS (Do not include this child.)		45. NUMBER OF OTHER OUTCOMES (Spontaneous or induced losses or ectopic or stillbirth pregnancies)		46. PRENATAL CARE? <input type="checkbox"/> Yes <input type="checkbox"/> No	
44a. Now living Number _____ <input type="checkbox"/> None	44b. Now dead Number _____ <input type="checkbox"/> None	45a. Before 20 weeks Number _____ <input type="checkbox"/> None	45b. 20 weeks & over Number _____ <input type="checkbox"/> None	47. DATE OF FIRST PRENATAL CARE VISIT (Month, Day, Year)	
44c. DATE OF LAST LIVE BIRTH (Month, Year)		45c. DATE OF LAST OTHER PREGNANCY OUTCOME (Month, Year)		48. DATE OF LAST PRENATAL CARE VISIT (Month, Day, Year)	
52. PLURALITY-Single, Twin, Triplet, etc. (Specify)		53. IF NOT A SINGLE BIRTH - Born First, Second, Third, etc. (Specify)		54. TOTAL LIVE BIRTHS AT THIS DELIVERY	
55. IS INFANT ALIVE AT THE TIME OF THIS REPORT? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		56. IS INFANT BEING BREAST-FED AT DISCHARGE? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		57. CIGARETTE SMOKING BEFORE & DURING PREGNANCY: Did mother smoke 3 mos. before or during pregnancy? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown For each time period, enter either the number of cigarettes or the number of packs of cigarettes smoked per day during each time period. If none, enter "0". Average number of cigarettes or packs of cigarettes smoked per day for each period: No. No. Three months before pregnancy: _____ cigarettes or _____ packs First three months of pregnancy: _____ cigarettes or _____ packs Second three months of pregnancy: _____ cigarettes or _____ packs Third Trimester of pregnancy: _____ cigarettes or _____ packs	
58. PRINCIPAL SOURCE OF PAYMENT FOR THIS DELIVERY <input type="checkbox"/> Medicaid <input type="checkbox"/> Private/Employer Ins. <input type="checkbox"/> Self-pay <input type="checkbox"/> Indian Health Service <input type="checkbox"/> CHAMPUS/TRICARE <input type="checkbox"/> Other government <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Unknown		59. MOTHER'S MEDICAL RECORD NO.		60. NEWBORN'S MEDICAL RECORD NO.	
61. MOTHER TRANSFERRED IN FOR DELIVERY DUE TO MATERNAL, MEDICAL, OR FETAL INDICATIONS? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, enter facility name)		62. INFANT TRANSFERRED (Within 24 hours of delivery) <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, enter facility name)			
FACILITY TRANSFERRED FROM:		FACILITY TRANSFERRED TO:			

CHILD'S NAME _____

MOTHER'S NAME _____

PRENATAL (Birth)		LABOR-DELIVERY/NEWBORN				
63. NUTRITION OF MOTHER (Check all that apply.) 1. Height _____ 2. Prepregnancy Weight _____ 3. Weight at delivery _____ 4. Did mother get WIC food for herself? Yes _____ No _____ Unknown _____		66. OBSTETRICAL PROCEDURES (Check all that apply.) 1. <input type="checkbox"/> Cervical cerclage 2. <input type="checkbox"/> Tocolysis 3. External cephalic version: <input type="checkbox"/> Successful <input type="checkbox"/> Failed 4. <input type="checkbox"/> None of the above				
64. MEDICAL RISK FACTORS (Check all that apply.) 1. <input type="checkbox"/> Diabetes, prepregnancy 2. <input type="checkbox"/> Diabetes, gestational 3. Hypertension <input type="checkbox"/> Prepregnancy (Chronic) <input type="checkbox"/> Gestational (PIH, preeclampsia) <input type="checkbox"/> Eclampsia 4. <input type="checkbox"/> Previous preterm birth 5. <input type="checkbox"/> Other previous poor pregnancy outcome (SGA, perinatal death, etc.) 6. <input type="checkbox"/> Vaginal bleeding during this pregnancy prior to labor 7. <input type="checkbox"/> Pregnancy resulted from infertility treatment (If yes, check all that apply.) <input type="checkbox"/> Fertility-enhancing drugs, Artificial insemination or Intrauterine insemination <input type="checkbox"/> Assisted reproductive technology (e.g. in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT)) 8. <input type="checkbox"/> Mother had a previous cesarean delivery, if yes, how many? Number: _____ 9. <input type="checkbox"/> Alcohol use No. of drinks per week: _____ 10. <input type="checkbox"/> None of the above		70. INFECTIONS PRESENT AND/OR TREATED (During this pregnancy, check all that apply.) 1. <input type="checkbox"/> Gonorrhea 2. <input type="checkbox"/> Syphilis 3. <input type="checkbox"/> Herpes Simplex Virus (HSV) 4. <input type="checkbox"/> Chlamydia 5. <input type="checkbox"/> Hepatitis B 6. <input type="checkbox"/> Hepatitis C 7. <input type="checkbox"/> AIDS or HIV antibody 8. <input type="checkbox"/> None of the above				
		71. ABNORMAL CONDITIONS OF NEWBORN (Check all that apply) 1. <input type="checkbox"/> Assisted ventilation required immediately following delivery 2. <input type="checkbox"/> Assisted ventilation required for more than six hours 3. <input type="checkbox"/> NICU admission 4. <input type="checkbox"/> Newborn given surfactant replacement therapy 5. <input type="checkbox"/> Antibiotics received by the newborn for suspected neonatal sepsis 6. <input type="checkbox"/> Seizure or serious neurologic dysfunction 7. <input type="checkbox"/> Significant birth injury (skeletal fracture(s), peripheral nerve injury, and/or soft tissue/solid organ hemorrhage which requires intervention) 8. <input type="checkbox"/> None of the above				
		72. VACCINES ADMINISTERED TO NEWBORN 1. <input type="checkbox"/> Hepatitis B Date Given: _____ 2. <input type="checkbox"/> Other* Specify: _____ Date Given: _____				
		73. APGAR SCORE <table border="1"> <tr> <td>1 min</td> <td>5 min</td> <td>10 min</td> </tr> </table>		1 min	5 min	10 min
1 min	5 min	10 min				
65. METHOD OF DELIVERY 1. Forceps attempted? Yes _____ No _____ Successful Yes _____ No _____ 2. Vacuum extraction attempted? Yes _____ No _____ Successful Yes _____ No _____ 3. Fetal presentation at delivery <input type="checkbox"/> Cephalic <input type="checkbox"/> Breech <input type="checkbox"/> Other 4. Final route and method of delivery (check one) <input type="checkbox"/> Vaginal/spontaneous <input type="checkbox"/> Vaginal/forceps <input type="checkbox"/> Vaginal/vacuum <input type="checkbox"/> Cesarean, if cesarean was a trial of labor attempted? Yes _____ No _____		68. CHARACTERISTICS OF LABOR AND DELIVERY (Check all that apply.) 1. <input type="checkbox"/> Induction of labor 2. <input type="checkbox"/> Augmentation of labor 3. <input type="checkbox"/> Non-vertex presentation 4. <input type="checkbox"/> Steroids (glucocorticoids) for fetal lung maturation received by the mother prior to delivery 5. <input type="checkbox"/> Antibiotics received by the mother during labor 6. <input type="checkbox"/> Clinical chorioamnionitis diagnosed during labor or maternal temperature $\geq 38^{\circ}\text{C}$ (100.4°F) 7. <input type="checkbox"/> Moderate/heavy meconium staining of the amniotic fluid 8. <input type="checkbox"/> Fetal intolerance of labor: (examples: in-utero resuscitative measures, further fetal assessment, or operative delivery) 9. <input type="checkbox"/> Epidural or spinal anesthesia during labor 10. <input type="checkbox"/> None of the above				
		69. MATERNAL MORBIDITY (Check all that apply.) (These are complications associated with labor and delivery.) 1. <input type="checkbox"/> Maternal transfusion 2. <input type="checkbox"/> Third or fourth degree perineal laceration 3. <input type="checkbox"/> Ruptured uterus 4. <input type="checkbox"/> Unplanned hysterectomy 5. <input type="checkbox"/> Admission to intensive care unit 6. <input type="checkbox"/> Unplanned operating room procedure following delivery 7. <input type="checkbox"/> None of the above				
		74. CONGENITAL ANOMALIES OF THE NEWBORN (Check all that apply.) 1. <input type="checkbox"/> Anencephaly 2. <input type="checkbox"/> Meningocele/Spina bifida 3. <input type="checkbox"/> Cyanotic congenital heart disease 4. <input type="checkbox"/> Congenital diaphragmatic hernia 5. <input type="checkbox"/> Omphalocele 6. <input type="checkbox"/> Gastroschisis 7. <input type="checkbox"/> Limb reduction defect (excluding congenital amputation and dwarfing syndromes) 8. <input type="checkbox"/> Cleft Lip with or without Cleft Palate 9. <input type="checkbox"/> Cleft Palate alone 10. <input type="checkbox"/> Down Syndrome <input type="checkbox"/> Karyotype confirmed <input type="checkbox"/> Karyotype pending 11. <input type="checkbox"/> Suspected chromosomal disorder <input type="checkbox"/> Karyotype confirmed <input type="checkbox"/> Karyotype pending 12. <input type="checkbox"/> Hypospadias 13. <input type="checkbox"/> Fetal alcohol syndrome 14. <input type="checkbox"/> Other congenital anomalies (Specify) _____ 15. <input type="checkbox"/> None of the above				

Parent's Telephone Number: _____

CHILD'S NAME _____

MOTHER'S NAME _____

Test required by K.S.A. 65-153f 153G Serological Test Made: _____ 1 st _____ 2 nd _____ 3 rd (Trimester) _____ At Delivery _____ Not Performed If no test made, state reason:	Test required by K.S.A. 65-180 Infant Neonatal Screening specimen taken: _____ Yes _____ No Kit Number _____ If no test made, state reason:	Test required by K.S.A. 65-1157A Newborn Hearing Screening Accomplished: _____ Yes _____ No	
Infant's patient number:			
Infant's Primary Care Physician			
First	Middle	Last	Title (MD, DO, etc.)
If screening accomplished, Date hearing screened _____ / _____ / _____ <div style="text-align: center; font-size: small;">Month Day Year</div>		The results of the hearing screening ✓: Right ear: _____ Pass _____ Refer for further testing Left ear: _____ Pass _____ Refer for further testing	
Physiologic equipment used ✓: _____ OAE _____ AABR _____ ABR			
If screening not accomplished, ✓ one reason: <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> _____ b – missed appointment _____ c – could not test _____ d – deceased _____ i – Incomplete test _____ m – Infant discharged before screening _____ n – transferred to NICU </div> <div style="width: 50%;"> _____ o – other _____ r – did not consent _____ s – scheduled but not completed _____ t – transferred to another hospital _____ u – no information _____ x – invalid results </div> </div>			

CERTIFICATE OF DEATH

1. DECEDENT'S LEGAL NAME (First, Middle, Last)						2. SEX		3. IF FEMALE, NAME PRIOR TO FIRST MARRIAGE				4. DATE OF DEATH (Month, Day, Year)			
5. SOCIAL SECURITY NUMBER		6. DATE OF BIRTH (Month, Day, Year)		7a. AGE-Last Birthday (Years)		7b. UNDER 1 YEAR Months Days		7c. UNDER 1 DAY Hours Minutes		8. PLACE OF BIRTH (City and State or Foreign Country)					
9. WAS DECEDENT EVER IN U.S. ARMED FORCES? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		10a. PLACE OF DEATH (Check only one)													
		HOSPITAL <input type="checkbox"/> Inpatient <input type="checkbox"/> DOA <input type="checkbox"/> ER/Outpatient				<input type="checkbox"/> Nursing Home <input type="checkbox"/> Hospice Facility <input type="checkbox"/> Assisted Living Facility <input type="checkbox"/> Decedent's Residence <input type="checkbox"/> Other (Specify) _____									
10b. FACILITY NAME (If not institution, give street and number)				10c. COUNTY OF DEATH				10d. CITY OR TOWN OF DEATH				10e. ZIP CODE			
11. MARITAL STATUS <input type="checkbox"/> Married <input type="checkbox"/> Married, but separated <input type="checkbox"/> Widowed <input type="checkbox"/> Divorced <input type="checkbox"/> Never Married <input type="checkbox"/> Unknown								12. SURVIVING SPOUSE (If wife, give name before first marriage)							
13a. RESIDENCE-STREET ADDRESS & APARTMENT NO.								13b. STATE							
13c. COUNTY				13d.CITY OR TOWN				13e. ZIP CODE		13f. INSIDE CITY LIMITS? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown					
14. FATHER'S NAME (First, Middle, Last)						15. MOTHER'S NAME PRIOR TO FIRST MARRIAGE (First, Middle, Last)									
16a. INFORMANT'S NAME (First, Middle, Last)				16b. MAILING ADDRESS (Street and Number, City, State, Zip Code)				16c. RELATIONSHIP TO DECEDENT							
17. METHOD OF DISPOSITION <input type="checkbox"/> Burial <input type="checkbox"/> Cremation <input type="checkbox"/> Removal from State <input type="checkbox"/> Donation <input type="checkbox"/> Entombment <input type="checkbox"/> Other (Specify) _____				18a. PLACE OF DISPOSITION (Name of cemetery, crematory, or other place)				18b. LOCATION-City or Town, and State							
19. FUNERAL SERVICE LICENSEE & LICENSE NO. (Signature) ➤						20. NAME OF EMBALMER & LICENSE NO.									
21. NAME AND ADDRESS OF FIRM															
22. CAUSE OF DEATH – Part I. Enter the chain of events - diseases, injuries, or complications-that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines, if necessary. IMMEDIATE CAUSE (Final disease or condition resulting in death) a. _____ DUE TO (OR AS A CONSEQUENCE OF): Sequentially list conditions, if any, leading to immediate cause listed on line a. Enter the UNDERLYING CAUSE (disease or injury that initiated the events resulting in death) LAST. b. _____ DUE TO (OR AS A CONSEQUENCE OF): c. _____ DUE TO (OR AS A CONSEQUENCE OF): d. _____															
PART II. Enter other significant conditions contributing to death, but not resulting in the underlying cause given in Part I.						23a.AUTOPSY <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		23b.WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not Applicable		23c.WAS CORONER CONTACTED? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown					
24. DID TOBACCO USE CONTRIBUTE TO DEATH? <input type="checkbox"/> Yes <input type="checkbox"/> Probably <input type="checkbox"/> No <input type="checkbox"/> Unknown		25. IF FEMALE <input type="checkbox"/> Not pregnant within past year <input type="checkbox"/> Not pregnant, but pregnant 43 days to 1 year before death <input type="checkbox"/> Pregnant at time of death <input type="checkbox"/> Unknown if pregnant within the last year <input type="checkbox"/> Not pregnant, but pregnant within 42 days of death						26. MANNER OF DEATH <input type="checkbox"/> Natural <input type="checkbox"/> Homicide <input type="checkbox"/> Accident <input type="checkbox"/> Pending Investigation <input type="checkbox"/> Suicide <input type="checkbox"/> Could not be determined							
27a. DATE OF INJURY (Month, Day, Year)		27b. TIME OF INJURY A.M. P.M.		27c. INJURY AT WORK <input type="checkbox"/> Yes <input type="checkbox"/> No		27d. DESCRIBE HOW INJURY OCCURRED									
27e. PLACE OF INJURY-Residence, farm, street, factory, building, etc. (Specify)						27f. LOCATION (Street and Number or Rural Route, City or Town, State, Zip Code)									
28a. DATE PRONOUNCED DEAD (Month, Day, Year)		28b. TIME PRONOUNCED DEAD A.M. P.M.		28c. ACTUAL OR PRESUMED TIME OF DEATH A.M. P.M.		28d. NAME OF PERSON PRONOUNCING DEATH (If applicable)				28e. LICENSE NO.					
29a.CERTIFIER (Check only one) <input type="checkbox"/> Certifying physician - To the best of my knowledge, death occurred due to the cause(s) and manner stated. <input type="checkbox"/> Pronouncing & Certifying physician - To the best of my knowledge, death occurred at the time, date, and place, and due to the cause(s) and manner stated. <input type="checkbox"/> Coroner - On the basis of examination, and/or investigation, in my opinion, death occurred at the time, date, and place, and due to the cause(s) and manner stated. Signature of certifier ➤ _____ LICENSE NO. _____ DATE CERTIFIER SIGNED _____															
29b. NAME, ADDRESS, AND ZIP CODE OF PERSON COMPLETING CAUSE OF DEATH <input type="checkbox"/> M.D. <input type="checkbox"/> D.O.								30. DATE FILED BY STATE REGISTRAR (Month, Day, Year)							

<p>31. ANCESTRY-What is this person's ancestry or ethnic origin? Italian, German, Dominican, Vietnamese, Hmong, French Canadian, etc. (Specify below)</p>	<p>33. RACE (Check one or more boxes to indicate what race(s) the decedent considered himself or herself to be.)</p>	<p>34. EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of death.)</p>
<p>32. HISPANIC ORIGIN (Check the box or boxes that best describes whether the decedent is Spanish/Hispanic/Latino. Check the "no" box if the decedent is not Spanish/Hispanic/Latino)</p>	<p><input type="checkbox"/> White</p> <p><input type="checkbox"/> Black or African American</p> <p><input type="checkbox"/> American Indian or Alaska Native (Name of the enrolled or principal tribes)</p> <p>_____</p> <p>_____</p>	<p><input type="checkbox"/> 8th grade or less</p> <p><input type="checkbox"/> 9th - 12th grade; no diploma</p> <p><input type="checkbox"/> High school graduate or GED</p> <p><input type="checkbox"/> Some College credit, but no degree</p> <p><input type="checkbox"/> Associate degree (e.g., AA, AS)</p> <p><input type="checkbox"/> Bachelor's degree (e.g., BA, AB, BS)</p> <p><input type="checkbox"/> Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)</p> <p><input type="checkbox"/> Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)</p> <p><input type="checkbox"/> Unknown</p>
<p><input type="checkbox"/> No, not Spanish/Hispanic/Latino</p> <p><input type="checkbox"/> Yes, Mexican/Mexican American/Chicano</p> <p><input type="checkbox"/> Yes, Puerto Rican</p> <p><input type="checkbox"/> Yes, Cuban</p> <p><input type="checkbox"/> Yes, Central American</p> <p><input type="checkbox"/> Yes, South American</p> <p><input type="checkbox"/> Yes, other Spanish/Hispanic/Latino (Specify)</p> <p>_____</p>	<p><input type="checkbox"/> Asian Indian</p> <p><input type="checkbox"/> Chinese</p> <p><input type="checkbox"/> Filipino</p> <p><input type="checkbox"/> Japanese</p> <p><input type="checkbox"/> Korean</p> <p><input type="checkbox"/> Vietnamese</p> <p><input type="checkbox"/> Other Asian (Specify)</p> <p>_____</p> <p>_____</p>	<p>35. DECEDENT'S USUAL OCCUPATION (Give kind of work done during most of working life. Do not use retired.)</p> <p>_____</p> <p>_____</p>
<p><input type="checkbox"/> Unknown</p>	<p><input type="checkbox"/> Native Hawaiian</p> <p><input type="checkbox"/> Guamanian or Chamorro</p> <p><input type="checkbox"/> Samoan</p> <p><input type="checkbox"/> Other Pacific Islander (Specify)</p> <p>_____</p> <p>_____</p> <p><input type="checkbox"/> Other (Specify)</p> <p>_____</p> <p>_____</p> <p><input type="checkbox"/> Unknown</p>	<p>36. KIND OF BUSINESS/INDUSTRY (Do not give name of company.)</p> <p>_____</p> <p>_____</p>

Kansas Department of Health and Environment
Office of Vital Statistics

CERTIFICATE OF STILLBIRTH (FETAL DEATH)

State File Number

1. NAME (First, Middle, Last, Suffix)		2. DATE OF DELIVERY (Month, Day, Year)		3. TIME OF DELIVERY <div style="text-align: right;">M</div>	
4. SEX	5. CITY, TOWN, OR LOCATION OF DELIVERY		6. COUNTY OF DELIVERY		
7. PLACE OF DELIVERY <input type="checkbox"/> Hospital <input type="checkbox"/> Freestanding Birthing Center <input type="checkbox"/> Home Delivery <input type="checkbox"/> Clinic/Doctor's Office <input type="checkbox"/> Other (Specify) _____			8. FACILITY NAME (If not institution, give street and number and zip code)		
9. MOTHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)				10. MOTHER'S LAST NAME PRIOR TO FIRST MARRIAGE	
11. DATE OF BIRTH (Month, Day, Year)		12. BIRTHPLACE (State, Territory, or Foreign Country)		13. PRESENT RESIDENCE-STATE	
14. COUNTY		15. CITY, TOWN, OR LOCATION		16. STREET AND NUMBER OF PRESENT RESIDENCE	
17. ZIPCODE		18. INSIDE CITY LIMITS? <div style="text-align: center;"><input type="checkbox"/> Yes <input type="checkbox"/> No</div>		19. MOTHER'S MAILING ADDRESS (If same as residence, leave blank)	
20. FATHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)			21. DATE OF BIRTH (Month, Day, Year)		22. BIRTHPLACE (State, Territory, or Foreign Country)
23. I CERTIFY THAT THE PERSONAL INFORMATION PROVIDED ON THE CERTIFICATE IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. Signature of Parent (or Other Informant) ➤					24. DATE SIGNED (Month, Day, Year)
25. CAUSE/CONDITIONS CONTRIBUTING TO FETAL DEATH					
25a. INITIATING CAUSE/CONDITION (Among the choices below, please select the <u>one</u> which most likely began the sequence of events resulting in the death of the fetus.)					
Maternal Conditions/Diseases (Specify) _____					
Complications of Placenta, Cord, or Membranes – <input type="checkbox"/> Rupture of membranes prior to onset of labor <input type="checkbox"/> Abruptio placenta <input type="checkbox"/> Placental insufficiency <input type="checkbox"/> Prolapsed cord					
<input type="checkbox"/> Chorioamnionitis <input type="checkbox"/> Other (Specify) _____					
Other Obstetrical or Pregnancy Complications (Specify) _____				Fetal Anomaly (Specify) _____	
Fetal Injury (Specify) _____				Fetal Infection (Specify) _____	
Other Fetal Conditions/Disorders (Specify) _____				<input type="checkbox"/> Unknown	
25b. OTHER SIGNIFICANT CAUSES OR CONDITIONS (Select or specify all other conditions contributing to death in item 25a.)					
Maternal Conditions/Diseases (Specify) _____					
Complications of Placenta, Cord, or Membranes – <input type="checkbox"/> Rupture of membranes prior to onset of labor <input type="checkbox"/> Abruptio placenta <input type="checkbox"/> Placental insufficiency <input type="checkbox"/> Prolapsed cord					
<input type="checkbox"/> Chorioamnionitis <input type="checkbox"/> Other (Specify) _____					
Other Obstetrical or Pregnancy Complications (Specify) _____				Fetal Anomaly (Specify) _____	
Fetal Injury (Specify) _____				Fetal Infection (Specify) _____	
Other Fetal Conditions/Disorders (Specify) _____				<input type="checkbox"/> Unknown	
26. ESTIMATED TIME OF FETAL DEATH <input type="checkbox"/> Dead at time of first assessment, no labor ongoing <input type="checkbox"/> Dead at time of first assessment, labor ongoing <input type="checkbox"/> Died during labor, after first assessment <input type="checkbox"/> Unknown time of fetal death		27a. WAS AN AUTOPSY PERFORMED? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Planned		27b. WAS A HISTOLOGICAL PLACENTAL EXAMINATION PERFORMED? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Planned	
		27c. WERE AUTOPSY OR HISTOLOGICAL PLACENTAL EXAMINATION RESULTS USED IN DETERMINING THE CAUSE OF FETAL DEATH? <input type="checkbox"/> Yes <input type="checkbox"/> No			
28. I CERTIFY THAT THIS DELIVERY OCCURRED ON THE DATE STATED ABOVE AND THE FETUS WAS BORN DEAD. Signature ➤		29. DATE SIGNED (Month, Day, Year)		30. ATTENDANT'S NAME AND TITLE (If delivery not attended by physician) Name (Type) _____ <input type="checkbox"/> CNM/CM <input type="checkbox"/> Other Midwife <input type="checkbox"/> Other (Specify) _____	
31. CERTIFIER'S NAME AND TITLE (Type) <input type="checkbox"/> M.D. <input type="checkbox"/> D.O. <input type="checkbox"/> Other (Specify) _____		32. CERTIFIER'S MAILING ADDRESS (Street and Number or Rural Route, City or Town, State, Zip Code)		33a. METHOD OF DISPOSITION <input type="checkbox"/> Burial <input type="checkbox"/> Cremation <input type="checkbox"/> Donation <input type="checkbox"/> Hospital Disposition <input type="checkbox"/> Removal from State <input type="checkbox"/> Other (Specify) _____	
33b. PLACE OF DISPOSITION (Name of cemetery, crematory, or other place)			33c. LOCATION (City or Town, and State)		
34. FUNERAL DIRECTOR OR HOSPITAL ADMINISTRATOR Signature ➤		35. FIRM OR HOSPITAL NAME AND ADDRESS		36. DATE FILED BY STATE REGISTRAR (Month, Day, Year)	

CONFIDENTIAL INFORMATION FOR INTERNAL USE ONLY

37. IF HOME DELIVERY, WAS DELIVERY PLANNED AT HOME? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown				38. MOTHER'S MEDICAL RECORD NO. _____	
39a. WAS MOTHER EVER MARRIED? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			39b. MOTHER MARRIED? (At birth, conception or any time between) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		
40. PARENT'S HISPANIC ORIGIN (Check the box or boxes that best describes whether the parent is Spanish, Hispanic, or Latino. Check the "no" box if the parent is not Spanish, Hispanic, or Latino.)		41. PARENT'S RACE (Check one or more races to indicate what you consider yourself to be.)			
<div style="display: flex;"> <div style="flex: 1;"> 40a. MOTHER- <input type="checkbox"/> No, not Spanish/Hispanic/Latina <input type="checkbox"/> Yes, Mexican/Mexican American/Chicana <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, Central American <input type="checkbox"/> Yes, South American <input type="checkbox"/> Yes, other Spanish/Hispanic/Latina (Specify) _____ <input type="checkbox"/> Unknown </div> <div style="flex: 1;"> 40b. FATHER- <input type="checkbox"/> No, not Spanish/Hispanic/Latino <input type="checkbox"/> Yes, Mexican/Mexican American/Chicano <input type="checkbox"/> Yes, Puerto Rican <input type="checkbox"/> Yes, Cuban <input type="checkbox"/> Yes, Central American <input type="checkbox"/> Yes, South American <input type="checkbox"/> Yes, other Spanish/Hispanic/Latino (Specify) _____ <input type="checkbox"/> Unknown </div> </div>		<div style="display: flex;"> <div style="flex: 1;"> 41a. MOTHER <input type="checkbox"/> White <input type="checkbox"/> Black or African American <input type="checkbox"/> American Indian or Alaska Native (Name of the enrolled or principal tribes) _____ <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Other Asian (Specify) _____ <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> Samoan <input type="checkbox"/> Other Pacific Islander (Specify) _____ <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Unknown </div> <div style="flex: 1;"> 41b. FATHER <input type="checkbox"/> White <input type="checkbox"/> Black or African American <input type="checkbox"/> American Indian or Alaska Native (Name of the enrolled or principal tribes) _____ <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Other Asian (Specify) _____ <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> Samoan <input type="checkbox"/> Other Pacific Islander (Specify) _____ <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Unknown </div> </div>			
42. ANCESTRY - What is the parents' ancestry or ethnic origin? - Italian, German, Dominican, Vietnamese, Hmong, French Canadian, etc. (Specify below)		43. OCCUPATION AND BUSINESS/INDUSTRY			
		Occupation		Business/Industry (Do not give name of company.)	
42a. MOTHER		43a. MOTHER (Most recent)		43c. MOTHER	
42b. FATHER		43b. FATHER (Usual)		43d. FATHER	
44. EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of delivery.)					
44a. MOTHER'S EDUCATION		<input type="checkbox"/> 8 th grade or less <input type="checkbox"/> Some College credit, but no degree <input type="checkbox"/> Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA) <input type="checkbox"/> Unknown		<input type="checkbox"/> 9 th - 12 th grade, no diploma <input type="checkbox"/> Associate degree (e.g., AA, AS) <input type="checkbox"/> Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD) <input type="checkbox"/> High school graduate or GED <input type="checkbox"/> Bachelor's degree (e.g., BA, AB, BS)	
44a. FATHER'S EDUCATION		<input type="checkbox"/> 8 th grade or less <input type="checkbox"/> Some College credit, but no degree <input type="checkbox"/> Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA) <input type="checkbox"/> Unknown		<input type="checkbox"/> 9 th - 12 th grade, no diploma <input type="checkbox"/> Associate degree (e.g., AA, AS) <input type="checkbox"/> Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD) <input type="checkbox"/> High school graduate or GED <input type="checkbox"/> Bachelor's degree (e.g., BA, AB, BS)	
45. PREVIOUS LIVE BIRTHS (Do not include this child.)		46. NUMBER OF OTHER OUTCOMES (Spontaneous or induced losses or ectopic or stillbirth pregnancies)		47. PLURALITY – Single, Twin, Triplet, etc. (Specify)	
45a. Now living Number _____ <input type="checkbox"/> None	45b. Now dead Number _____ <input type="checkbox"/> None	46a. Before 20 weeks Number _____ <input type="checkbox"/> None	46b. 20 weeks & over Number _____ <input type="checkbox"/> None	48. IF NOT A SINGLE BIRTH – Born First, Second, Third, etc. (Specify)	
45c. DATE OF LAST LIVE BIRTH (Month, Year)		46c. DATE OF LAST OTHER PREGNANCY OUTCOME (Month, Year)		49. DATE LAST NORMAL MENSES BEGAN (Month, Day, Year)	
				50. OBSTETRIC ESTIMATE OF GESTATION (Completed Weeks)	
51. WEIGHT OF FETUS (grams)					
52. PRENATAL CARE? <input type="checkbox"/> Yes <input type="checkbox"/> No		53. DATE OF FIRST PRENATAL CARE VISIT (Month, Day, Year)		54. DATE OF LAST PRENATAL CARE VISIT (Month, Day, Year)	
				55. PRENATAL VISIT – Total number (If none, enter "0")	
56. CIGARETTE SMOKING BEFORE & DURING PREGNANCY: Did mother smoke 3 mos. before or during pregnancy? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown For each time period, enter either the number of cigarettes or the number of packs of cigarettes smoked per day . If none, enter "0". Average number of cigarettes or packs of cigarettes smoked per day : No. No. Three months before pregnancy: _____ cigarettes or _____ packs First three months of pregnancy: _____ cigarettes or _____ packs Second three months of pregnancy: _____ cigarettes or _____ packs Third Trimester of pregnancy: _____ cigarettes or _____ packs		57. PRINCIPAL SOURCE OF PAYMENT FOR THIS DELIVERY <input type="checkbox"/> Medicaid <input type="checkbox"/> Private/Employer Ins. <input type="checkbox"/> Self-pay <input type="checkbox"/> Indian Health Service <input type="checkbox"/> CHAMPUS/TRICARE <input type="checkbox"/> Other government <input type="checkbox"/> Other <input type="checkbox"/> Unknown			
		58a. MOTHER TRANSFERRED IN FOR DELIVERY DUE TO MATERNAL, MEDICAL, OR FETAL INDICATIONS? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, enter facility name)		58b. FACILITY TRANSFERRED FROM:	

CHILD'S NAME _____
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MOTHER'S NAME _____

PRENATAL	LABOR-DELIVERY/STILLBORN FETUS
<p>59. NUTRITION OF MOTHER</p> <p>1. Height _____</p> <p>2. Prepregnancy Weight _____</p> <p>3. Weight at delivery _____</p> <p>4. Did mother get WIC food for herself? Yes _____ No _____ Unknown _____</p> <p>60. MEDICAL RISK FACTORS (Check all that apply.)</p> <p>1. <input type="checkbox"/> Diabetes, prepregnancy</p> <p>2. <input type="checkbox"/> Diabetes, gestational</p> <p>3. Hypertension <input type="checkbox"/> Prepregnancy (Chronic) <input type="checkbox"/> Gestational (PIH, preeclampsia) <input type="checkbox"/> Eclampsia</p> <p>4. <input type="checkbox"/> Previous preterm birth</p> <p>5. <input type="checkbox"/> Other previous poor pregnancy outcome (SGA, perinatal death, etc.)</p> <p>6. <input type="checkbox"/> Vaginal bleeding during this pregnancy prior to labor</p> <p>7. <input type="checkbox"/> Pregnancy resulted from infertility treatment (If yes, check all that apply.) <input type="checkbox"/> Fertility-enhancing drugs, Artificial insemination or Intrauterine insemination <input type="checkbox"/> Assisted reproductive technology (e.g. in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT))</p> <p>8. <input type="checkbox"/> Mother had a previous cesarean delivery, if yes, how many Number _____</p> <p>9. <input type="checkbox"/> Alcohol use No. of drinks per week: _____</p> <p>10. <input type="checkbox"/> None of the above</p> <p>61. METHOD OF DELIVERY</p> <p>1. Forceps attempted? Yes _____ No _____ Successful: Yes _____ No _____</p> <p>2. Vacuum extraction attempted? Yes _____ No _____ Successful: Yes _____ No _____</p> <p>3. Fetal presentation at delivery <input type="checkbox"/> Cephalic <input type="checkbox"/> Breech <input type="checkbox"/> Other</p> <p>4. Final route and method of delivery (check one) <input type="checkbox"/> Vaginal/spontaneous <input type="checkbox"/> Vaginal/forceps <input type="checkbox"/> Vaginal/vacuum <input type="checkbox"/> Cesarean, if cesarean was a trial of labor attempted? Yes _____ No _____</p> <p>5. Hysterotomy/Hysterectomy Yes _____ No _____</p>	<p>62. MATERNAL MORBIDITY (Check all that apply.) (These are complications associated with labor and delivery.)</p> <p>1. <input type="checkbox"/> Maternal transfusion</p> <p>2. <input type="checkbox"/> Third or fourth degree perineal laceration</p> <p>3. <input type="checkbox"/> Ruptured uterus</p> <p>4. <input type="checkbox"/> Unplanned hysterectomy</p> <p>5. <input type="checkbox"/> Admission to intensive care unit</p> <p>6. <input type="checkbox"/> Unplanned operating room procedure following delivery</p> <p>7. <input type="checkbox"/> None of the above</p> <p>63. INFECTIONS PRESENT AND/OR TREATED (During this pregnancy, check all that apply.)</p> <p>1. <input type="checkbox"/> Gonorrhea</p> <p>2. <input type="checkbox"/> Syphilis</p> <p>3. <input type="checkbox"/> Herpes Simplex Virus (HSV)</p> <p>4. <input type="checkbox"/> Chlamydia</p> <p>5. <input checked="" type="checkbox"/> Listeria</p> <p>6. <input type="checkbox"/> Group B Streptococcus</p> <p>7. <input type="checkbox"/> Cytomegalovirus</p> <p>8. <input type="checkbox"/> Parvo virus</p> <p>9. <input type="checkbox"/> Toxoplasmosis</p> <p>10. <input type="checkbox"/> AIDS or HIV antibody</p> <p>11. <input type="checkbox"/> None of the above</p> <p>12. <input type="checkbox"/> Other (Specify) _____</p> <p>64. CONGENITAL ANOMALIES OF THE NEWBORN (Check all that apply.)</p> <p>1. <input type="checkbox"/> Anencephaly</p> <p>2. <input checked="" type="checkbox"/> Meningocele/Spina bifida</p> <p>3. <input type="checkbox"/> Cyanotic congenital heart disease</p> <p>4. <input type="checkbox"/> Congenital diaphragmatic hernia</p> <p>5. <input type="checkbox"/> Omphalocele</p> <p>6. <input type="checkbox"/> Gastroschisis</p> <p>7. <input type="checkbox"/> Limb reduction defect (excluding congenital amputation and dwarfing syndromes)</p> <p>8. <input type="checkbox"/> Cleft Lip with or without Cleft Palate</p> <p>9. <input type="checkbox"/> Cleft Palate alone</p> <p>10. <input type="checkbox"/> Down Syndrome <input type="checkbox"/> Karyotype confirmed <input type="checkbox"/> Karyotype pending</p> <p>11. <input type="checkbox"/> Suspected chromosomal disorder <input type="checkbox"/> Karyotype confirmed <input type="checkbox"/> Karyotype pending</p> <p>12. <input type="checkbox"/> Hypospadias</p> <p>13. <input type="checkbox"/> Fetal alcohol syndrome</p> <p>14. <input type="checkbox"/> Other congenital anomalies (Specify) _____</p> <p>15. <input type="checkbox"/> None of the above</p>

THIS IS NOT PART OF THE CERTIFICATE OF STILLBIRTH

Test required by K.S.A. 65-153F, 153G

Serological Test Made: _____ 1st _____ 2nd _____ 3rd (Trimester) _____ At Delivery _____ Not Performed

If no test made, state reason: _____